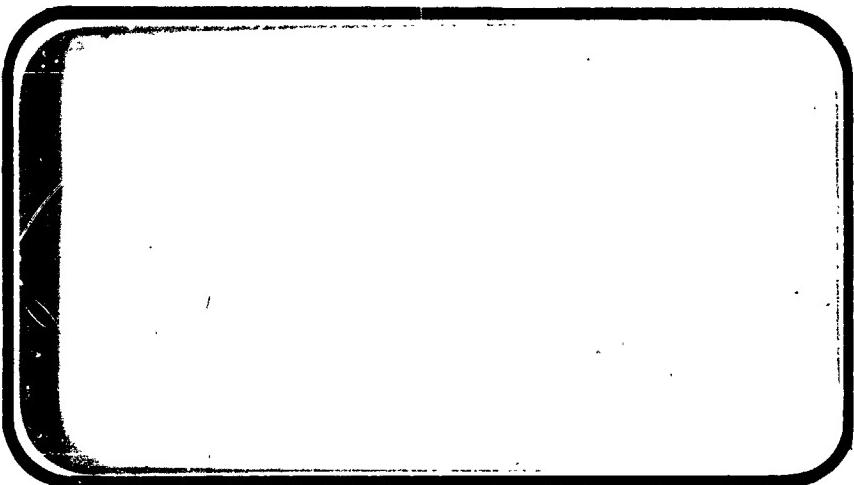




NATIONAL AERONAUTICS AND SPACE ADMINISTRATION



NASA-CR-134074) EFFECT OF REACTION  
CONTROL SYSTEM JET-FLOW FIELD INTERACTIONS  
ON A 0.015 SCALE MODEL SPACE SHUTTLE  
ORBITER AERODYNAMIC (Chrysler Corp.)  
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## **SPACE SHUTTLE**

A circular library stamp with a double-line border. The outer ring contains the numbers 1 through 9 twice, followed by 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 1, 2, 3, 4, 5, 6, 7, 8, 9. The inner circle has the word "RECEIVED" at the top, "NASA STI FACILITY" in the middle, and "INPUT BRANCH" at the bottom. At the top of the inner circle, it says "MAR 1974" with an arrow pointing to the right.

## AEROTHERMODYNAMIC DATA REPORT

**JOHNSON SPACE CENTER  
HOUSTON, TEXAS**

**DATA MANAGEMENT services**  
SPACE DIVISION  **CHRYSLER**  
**CORPORATION**

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EFFECTS OF REACTION CONTROL SYSTEM JET-FLOW FIELD  
INTERACTIONS ON A 0.015 SCALE MODEL SPACE SHUTTLE  
ORBITER AERODYNAMIC CHARACTERISTICS

By

William J. Monta and J. R. Rausch

Prepared under NASA Contract Number NAS9-13247

by

Data Management Services  
Chrysler Corporation Space Division  
New Orleans, La. 70189

for

Engineering Analysis Division

Johnson Space Center  
National Aeronautics and Space Administration  
Houston, Texas

WIND TUNNEL TEST SPECIFICS

Test Number: LaRC UPWT 1031  
NASA Series No.: MA-7  
Date: May 14-18, 1973

FACILITY COORDINATOR:

David R. Stone  
SSD, Hypersonic Analysis Section  
Bldg. 1247-B, Room 120B  
Mail Stop 163-A  
Langley Research Center  
Hampton, Va. 23365

Phone: (703) 827-2483

PROJECT ENGINEERS:

William J. Monta  
HSAD-Unitary Tunnel Section  
Bldg. 1251, Mail Stop 406  
Langley Research Center  
Hampton, Va. 23365

Phone: (703) 827-3181

J. R. Rausch  
GD/Convair Aerospace Division  
Mail Zone 631-00, Bldg. 3  
Kearny Mesa Plant  
San Diego, Cal 92112

Phone: (714) 277-8900 ext 1352

DATA MANAGEMENT SERVICES:

This document has been prepared by:

J. E. Vaughn  
Liaison Operations

M. M. Mann  
Data Operations

John E. Vaughn  
M. M. Mann

This document has been reviewed and is approved for release.

N. D. Kemp  
Data Management Services

Donald E. Pouchard

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EFFECTS OF REACTION CONTROL SYSTEM JET-FLOW  
FIELD INTERACTIONS ON A 0.015 SCALE MODEL SPACE  
SHUTTLE ORBITER AERODYNAMIC CHARACTERISTICS

By

William J. Monza\* and J. R. Rausch\*\*

SUMMARY

This report presents results from an experimental program sponsored by NASA-Johnson Space Center on the effects of the Reaction Control System (RCS) jet-flow field interactions on the Space Shuttle orbiter system during entry. The primary objective of the test program was to obtain data for the Rockwell International Preliminary Requirements Review (PRR) shuttle orbiter configuration to determine control amplification factors resulting from jet interaction between the RCS plumes and the external flow over the vehicle. A secondary objective was to provide data for comparison and improvement of analytic jet interaction prediction techniques.

To accomplish the objectives, testing was conducted by General Dynamics Convair Aerospace Division in the NASA Langley Research Center 4 x 4-Ft Unitary Wind Tunnel on an 0.015 Scale Model of the Rockwell PRR Configuration. Tests were made at Mach numbers of 2.5, 3.0 and 4.0 over a Reynolds number per foot range of 3.0 to 5.0 million. The model was pitched through an angle-of-attack range of 0 to 20 degrees with angles-of-sideslip of 0 and  $\pm 5$  degrees.

\*NASA/LeRC  
\*\*GD/C

The test program in the 4 x 4-Ft Unitary Wind Tunnel was divided into two phases; (1) force and moment measurements were made with and without RCS blowing, investigating environment parameters ( $R_e$ ,  $\alpha$ ,  $\beta$ ), RCS plume parameters (Jet pressure ratio, momentum ratio and thrust level), and geometry parameters (RCS pod locations) on the orbiter model, (2) oil flow visualization tests were conducted on a dummy balance at the end of the test. Only the results of phase 1 testing are included in this report.

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### Plotted Coefficient Schedule

- A) CN, CL, CLM, CA, CD, CY, CYN, CLN, CBL, CSL vs ALPHA
- B)  $\Delta$ CN,  $\Delta$ CL,  $\Delta$ CLM,  $\Delta$ CA,  $\Delta$ CD,  $\Delta$ CY,  $\Delta$ CYN,  $\Delta$ CLN,  $\Delta$ CBL,  $\Delta$ CSL vs ALPHA

NOMENCLATURE  
General

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
$s$		speed of sound; m/sec, ft/sec
$C_p$	CP	pressure coefficient; $(p_1 - p_\infty)/q$
M	MACH	Mach number; $V/s$
p		pressure; N/m <sup>2</sup> , psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$ , N/m <sup>2</sup> , psf
RN/L	RN/L	unit Reynolds number; per m, per ft
v		velocity; m/sec, ft/sec
$\alpha$	ALPHA	angle of attack, degrees
$\beta$	BETA	angle of sideslip, degrees
$\psi$	PSI	angle of yaw, degrees
$\phi$	PHI	angle of roll, degrees
$\rho$		mass density; kg/m <sup>3</sup> , slugs/ft <sup>3</sup>

Reference & C.G. Definitions

A <sub>b</sub>		base area; m <sup>2</sup> , ft <sup>2</sup>
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
$\bar{c}$ <sub>REF</sub>	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m <sup>2</sup> , ft <sup>2</sup>
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
$\infty$	free stream

NOMENCLATURE (Continued)

Body-Axis System

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
$C_N$	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
$C_A$	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
$C_Y$	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
$C_{A_b}$	CAB	base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(p_b - p_\infty)/qS$
$C_{A_f}$	CAF	forebody axial force coefficient, $C_A - C_{A_b}$
$C_m$	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS_{\text{REF}}}$
$C_n$	CIN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qS_b}$
$C_l$	CBL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qS_b}$
<u>Stability-Axis System</u>		
$C_L$	CL	lift coefficient; $\frac{\text{lift}}{qS}$
$C_D$	CD	drag coefficient; $\frac{\text{drag}}{qS}$
$C_{D_b}$	CDB	base-drag coefficient; $\frac{\text{base drag}}{qS}$
$C_{D_f}$	CDF	forebody drag coefficient; $C_D - C_{D_b}$
$C_Y$	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
$C_m$	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS_{\text{REF}}}$
$C_n$	CIN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qS_b}$
$C_l$	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qS_b}$
L/D	L/D	lift-to-drag ratio; $C_L/C_D$

NOMENCLATURE

ADDITIONS TO STANDARD LIST

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
P <sub>oj</sub>	PO-JET	total pressure in model RCS nozzle chamber, psi
A/A*		nozzle exit to throat area ratio.

## CONFIGURATIONS INVESTIGATED

General Dynamics/Convair furnished an 0.015 scale model of the space shuttle PRR orbiter configuration which is shown in Figure 2. The model was cast and fabricated from 17-4 PH stainless steel using the PRR configuration design furnished by Rockwell International. Two left hand OMS pods were made; one from steel for the force tests and the other with a RTV covering for heat transfer tests. The RTV OMS pod had a white grid on the surface to assist in data reduction. In addition, one yaw nozzle configuration was covered with RTV for heat transfer tests with thrust. Only the force test configurations were used in this test.

The principal RCS locations tested are the yaw and roll thrusters located on the OMS pods near the base of the vehicle.

## ORBITER MODEL

Figure 4 presents a cut-away of the orbiter model while Figures 5 to 7 present close-up photographs showing model details. The model consists of the following parts:

- a. removable nose
- b. fuselage afterbody
- c. lower fuselage afterbody for wing-off
- d. lower-aft fuselage cover (heat shield/cover)
- e. fuselage afterbody fairings
- f. OMS pods
- g. vertical tail

- h. tail-off block
- i. wing
- j. wing tip dummy RCS pod
- k. balance adapter for the 6-component balance
- l. non-metric RCS plenum and supply line
- m. several nozzle configurations

All model parts are cast or machined from 17 PH stainless steel.

As shown in the Figure 4, the RCS engines are not mounted on the wind tunnel balance so that all that is measured is the basic configuration forces and moment and the resulting changes in these data from interactions caused by RCS operation.

#### NOZZLE CONFIGURATIONS

Figure 8 gives the details of the nozzle configurations furnished with the model. The nozzles are conical with a circular throat section.

The nozzle configurations available include:

- a. Twin nozzle yaw configuration having an expansion ratio of 2.72, N<sub>1</sub> (-33 part)
- b. Twin nozzle yaw configuration having an expansion ratio of 1.61, N<sub>2</sub> (-35 part)
- c. Twin nozzle yaw configuration having an expansion ratio of 1.91, N<sub>3</sub> (-37 part)
- d. Single nozzle yaw configuration having an equivalent nozzle area as (a) above with an expansion ratio of 2.72 N<sub>5</sub> (-39 part)

- e. Twin nozzle roll configuration left hand side exhausting downward having an expansion ratio of 2.72, N<sub>40</sub> (-29 part)
- f. Twin nozzle roll configuration right hand side exhausting upward having an expansion ratio of 2.72, N<sub>41</sub> (-31 part). N<sub>4</sub> represents both N<sub>40</sub> and N<sub>41</sub>.

The twin nozzle configurations are 1.5 exit diameters apart and are mounted as shown in Figure 9.

The nozzle configurations are designed to plug into the RCS plenum using an "O" ring as a seal. One dummy RCS pod is also furnished (-43) for sealing one side of the plenum as required. The roll RCS pod configurations are designed to be used individually or together.

Only the N<sub>1</sub>, N<sub>4</sub>, N<sub>40</sub> and N<sub>41</sub> nozzles (model parts -33, -29 and -31) were used in this test.

#### RCS ENGINE SIMULATION

The RCS engine simulated in this study is a hydrazine monopropellant rocket engine with the following full-scale characteristics:

1) chamber conditions

$$T_c = 2000^{\circ}\text{F}$$

$$P_c = 157 \text{ psia}$$

2) nozzle

80% bell

$$A/A^* = 20$$

exit diameter = 9.5 inches

3) thrust = 1110 lbs (vacuum)

The Reactor Control System used during entry consists of two yaw control engines and two roll control engines per side of the vehicle.

The reference entry trajectory used to establish the environmental conditions is the Rockwell International nominal guided entry trajectory (Trajectory Number 2007).

The baseline nozzle characteristics were combined with the reference trajectory using an isentropic expansion to define nozzle exit conditions to derive the nozzle flow parameter variation during entry. These parameters include:

1. nozzle exit static pressure ratio
2. nozzle thrust coefficient
3. nozzle momentum ratio
4. nozzle thrust ratio
5. nozzle mass flow ratio
6. nozzle temperature ratio
7. Herron's plume parameter

Reference 1 defines the values for the above parameters.

The nozzle ratios (thrust, momentum, mass flow, and temperature) were determined from the expressions given by Pindzola in reference 2 while Herron's parameter was defined in reference 3.

In order to determine the scaled nozzles which matched these parameters, the wind tunnel ambient conditions were obtained for the test Mach numbers and Reynolds numbers and the properties of the auxiliary air were assumed ( $R$ ,  $T_{\text{supply}}$ ).

The scaled nozzle expansion ratio and supply pressures were calculated to match both nozzle exit pressure ratio and thrust coefficient simultaneously for a given test gas and a given test condition. One matched nozzle was determined for each test gas (air or helium). Matching thrust coefficient and pressure ratio for these nozzles results in matching momentum ratio and thrust ratio but not mass flow ratio. The remaining nozzle parameters were computed at the other test conditions for each matched nozzle. A third nozzle was then sized for air as the test gas, matching full scale mass flow ratio and pressure ratio. A fourth nozzle, designed the same as the air nozzles (matching pressure ratio and thrust coefficient), was sized to have the throat area of two nozzles. This nozzle was used, in place of the two nozzle set, to determine if the analytic approach using a single equivalent nozzle to represent closely spaced nozzles is realistic.

The parameters for all these nozzles were computed at all test conditions. The run schedule was set up to obtain the greatest variation in parameters available for a given set of nozzles. Only the nozzles matched for air as the test gas were used in this test.

#### TEST FACILITY DESCRIPTION

The NASA LRC 4 foot Unitary Plan Wind Tunnel (UPWT) is a closed-circuit, continuous flow, variable density facility. The test section is 4 feet by 4 feet by 7 feet long.

Two tunnel legs are available for supersonic testing in the Mach number ranges 1.47 to 2.86 (Leg No. 1) and 2.29 to 4.63 (Leg No. 2). Both tunnel legs were used for this test. An asymmetric, sliding block nozzle position and total pressure setting provide the test Mach numbers at a specified Reynolds number. Reynolds number can be varied from 0.76 to 7.78 million per foot. Available stagnation pressure variation is 4.0 to 142. psia. Dynamic pressure variation is 95. to 1260. psf with normal operating stagnation temperature about 150°F in Mach modes 2 or 3 and about 175°F in Mach mode 4. The tunnel is equipped with a dry air supply, an evacuating system, and a cooling system. The facility power is approximately 83,000 horsepower.

Model mounting provisions consist of various sting arrangements, including axial (longitudinal), lateral (independent pitch and yaw), and roll movement with side wall support. A Schlieren system and oil flow visualization equipment are available. Data are recorded at the tunnel and reduced off-line at the Langley Computer Center. The tunnel is used for force and moment, pressure, and dynamic stability tests. Hot and cold jet effects and heat transfer have been studied in the UPWT.

## DATA REDUCTION

The measured forces and moments from the balance were reduced to aerodynamic coefficients using the standard reduction equations in both stability and body axis with the following reference area and lengths.

$$S_{ref} = 0.7245 \text{ ft}^2$$

$b_{ref}$  = 15.1152 inches (lateral-directional reference length)

$c(MAC)$  = 7.8828 inches (longitudinal reference length)

In the addition the moments are about a moment reference center (MRC) as shown in Figure 9.

Model Station 12.951

Model Water Line 6.000

All data have been corrected for deflection of the sting and balance due to aerodynamic loads. Corrections have also been made for flow angularity of the test section as determined from existing flow calibrations. No correction has been made to pitching moment to account for flow curvature, however. Model cavity pressure was measured with static orifices located in the vicinity of the balance, but model base pressure was not measured. No adjustment was made to axial force or drag data for cavity nor base pressure.

In addition to the normal aerodynamic coefficients incremental coefficient values between jet-on and jet-off runs were computed so that interaction increments are also presented as functions of angle of attack and yaw.

$$\Delta C_N = (C_{N_{jet \text{ on}}} - C_{N_{jet \text{ off}}})$$

$$\Delta C_m = (C_{m_{jet \text{ on}}} - C_{m_{jet \text{ off}}})$$

$$\Delta C_y = (C_y_{jet \text{ on}} - C_y_{jet \text{ off}})$$

$$\Delta C_n = (C_n_{jet \text{ on}} - C_n_{jet \text{ off}})$$

$$\Delta C_\ell = (C_\ell_{jet \text{ on}} - C_\ell_{jet \text{ off}})$$

It should be pointed out that the test utilized yaw jets on the port side which generated negative yawing moments and positive side forces, while the roll jets generated positive (right wing down) rolling moments.

Calibration tests were performed in a vacuum chamber at Convair Aerospace Division from March 26 to 28, 1973 in order to establish the nozzle thrust and mass flow as functions of nozzle plenum pressure.

The nozzle assemblies were mounted on a single component strain gage force balance in a 5 foot diameter vacuum chamber to obtain direct measurement of thrust of each nozzle block.

The mass flow data was computed by measuring the pressure drop across an orifice plate for which the constants had been determined by prior calibrations. Calibration runs were made both at 5 psia and 3 psia pressures in the vacuum chamber using dry Nitrogen as the test gas for all nozzles and additional helium as the test gas for one nozzle. The measured nozzle thrust data were then corrected to vacuum conditions. The results of these calibrations are presented in Reference 1.

## REFERENCES

1. Rausch, J. R. and Carter, W. V., "Pre-Test Report, Wind Tunnel Tests of a 0.015 Scale Space Shuttle Orbiter Model in the NASA-LRC 4 x 4-Ft Unitary Wind Tunnel to Determine Effects of RCS Jet-Flow Field Interactions on the Aerodynamic Characteristics," GD/C Aero Tech Note TN-73-AE-07.
2. Pindzola, M., "Jet Simulation in Ground Test Facilities," AGARDograph 79, Nov. 1963.
3. Herron, R.D., "Investigation of Jet Boundary Simulation Parameters for Underexpanded Jets in a Quiescent Atmosphere," AEDC Report AEDC-TR-68-108, Sept. 1968.
4. Fournier, R., Spencer B., Jr., "Aerodynamic Stability and Control Characteristics of a 0.01925 Scale Model NR-ATP Orbiter at Mach Numbers from 1.9 to 4.63" NASA Langley Research Center Space Shuttle Report DMS-DR-2001, Nov. 1972.

TABLE I.

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

TABLE II.  
(PPWT 1031(MA-7) DATA SET/RUN NUMBER  
INFLATION SUMMARY

PRETEST  
 POSTTEST

RUN NUMBER	CONFIGURATION	TEST RUN NUMBERS			
		SCHII	a	b	c
1	<u>BTN</u>	B	0	37	1.0
2					
3					
4	<u>BTN40</u>				
5					
6					
7					
8					
9					
10	<u>BWN41</u>				
11					
12					
13					
14					
15					
16	<u>BWN41</u>	A	0	0	3.0
17					
18					
19					
20					

A)  $0^\circ \rightarrow 20^\circ$   
 B)  $12^\circ \rightarrow 35^\circ$   
 C)  $12^\circ \rightarrow 25^\circ$   
 a or b  
 SCHII: 15

TABLE II. (Continued)

LIFT 1031 - 100% CONVERGENCE

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

 PRACTICE PRODUCTION

DATA SET IDENTIFIER	CONFIGURATION	SCHD.	PARABOLIC		NO. PPB	R <sub>1</sub>	R <sub>2</sub>	C <sub>1</sub>	C <sub>2</sub>	SHEET 1 X P <sub>1</sub>	SHEET 2 X P <sub>2</sub>
			P	P <sub>1</sub>							
RPM021	BWNTN1	B	0	0	1.0						
22		B	0	0	2.5						
23		B	0	0	5.0						
24		B	0	0	7.5						
25		C	0	0	10.0						
26		B	0	0	3.0						
27		C	0	0	5.0						
28		B	0	0	35.0						
29		B	0	0	100.0						
30		C	0	0	17.0						
31		B	0	0	100.0						
32		B	0	0	310.0						
33		B	0	0	310.0						
34		B	0	0	310.0						
35		B	0	0	310.0						
36	BWNTN4	A	0	0	3.0						
37		B	0	0	151.0						
38		B	0	0	185.0						
39		B	0	0	234.0	D	1.0				

D) P<sub>1</sub> = 0 → 600 psi

NASA-HIFC-L

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.

TABLE II. (CONTINUED)  
TEST UPNT 1021 DATA SET/RUN NUMBER  
COLLATION SUMMARY

PRETEST

POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHED.	PARAMETERS/VALUES			NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)	TEST RUN NUMBER
			a	b	c			
<b>BWNTN4</b>								
41		B	0	0	1.0			
42		B	-2.5					
43		B	2.5					
44		C	0	3.0				
45		C	0	5.0				
46		B	3.7	1.0				
47		B	9.9	1.0				
48		B	10.3	3.0				
49		C	17.0	5.0				
50		B	19.9	1.0				
51		B	1	1	200			
52		B	-2.5					
53		B	-5.0					
54		B	0	5.5	3.0			
55	<b>BWNTN40</b>	A	0	0	1.0			
56		A	0	15.1	3.0			
57		A	0	19.8	3.0			

6 OF 6  
SCHEDULES

NASA-MSC-WAF

TABLE II. (Concluded)

TEST UPWT 1031 DATA SET/RUN NUMBER  
COLLIGATION SUMMARY PRETEST POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHED.	PARAMETERS / VALUES			NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)			
			a	b	Pe/PA		1.0	2.5	2.95	4.0
TEST UPWT 1031										
PM058	BWT N4.0	B	0	0	1.0					
59		T	T	0	3.0					
60				37	1.0					
61				199	1.0					
62			163	3.0						
63				199	1.0					
64				328	1.0					
65				557	3.0					
66				600	1.0					
67	BWT N4.1	A	0	0	3.0					
68		T	T	151	3.0					
69				185	3.0					
70				60	0	1.0				
71				T	T	0	3.0			
72					37	1.0				
73					100	1.0				
74					103	3.0				
75					199	1.0				
76					328	1.0				
77					557	3.0				
78					600	1.0				

a or b  
scrambles

NASA-HSF-C-MAF

TABLE III. MODEL COMPONENT DIMENSIONS

MODEL COMPONENT:	<u>N<sub>1</sub></u>	
GENERAL DESCRIPTION:	<u>Reaction Control System Yaw Nozzles</u>	<u>N<sub>1</sub> Scaled</u>
<u>for Air as Test Gas</u>		
DRAWING NUMBER:		
<u><b>DIMENSIONS:</b></u>	<u><b>FULL-SCALE</b></u>	<u><b>MODEL-SCALE</b></u>
NUMBER OF NOZZLES	<u>2</u>	<u>2</u>
EXPANSION RATIO	<u>20</u>	<u>7.37</u>
EXIT DIA.	<u>9.5"</u>	<u>0.146"</u>
EXIT ANGLE	<u>8°</u>	<u>15°</u>
LOCATION		<u>LEFT SIDE ONLY</u>
X STA		<u>23.913"</u>
Y STA		<u>2.195</u>
Z STA		<u>7.123</u>
GAS	<u>N<sub>2</sub>H<sub>4</sub></u>	<u>Air</u>

TABLE III. MODEL COMPONENT DIMENSIONS (Continued)

MODEL COMPONENT: N4

GENERAL DESCRIPTION: Reaction Control System Roll Nozzles - Roll Right  
(Left Thruster Exhausts Toward Wing, Right Nozzle Past Vertical Fin)

DRAWING NUMBER: \_\_\_\_\_

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
NUMBER OF NOZZLES	<u>4</u>	<u>4 (2 left, 2 right)</u>
EXPANSION RATIO	<u>20</u>	<u>7.37</u>
EXIT DIA.	<u>9.5"</u>	<u>0.0146</u>
EXIT ANGLE	<u>8°</u>	<u>15°</u>
LOCATION		<u>Right Wing Down Roll Only</u>
X STA	<u>_____</u>	<u>23.775</u>
Y STA	<u>_____</u>	<u>1.750</u>
Z STA	<u>_____</u>	<u>7.686 &amp; 5.561</u>
GAS	<u>N<sub>2</sub>H<sub>4</sub></u>	<u>Air</u>

TABLE III. MODEL COMPONENT DIMENSIONS (Continued)

<b>MODEL COMPONENT:</b>	<u>N40</u>	
<b>GENERAL DESCRIPTION:</b>	Reaction Control System Left Side Pitch/Roll	
Nozzles Exhausting Toward Wing		
<hr/>		
<hr/>		
<hr/>		
<b>DRAWING NUMBER:</b>	<hr/>	
<b><u>DIMENSIONS:</u></b>	<b><u>FULL-SCALE</u></b>	<b><u>MODEL-SCALE</u></b>
NUMBER OF NOZZLES	<u>2</u>	<u>2</u>
EXPANSION RATIO	<u>20</u>	<u>7.37</u>
EXIT DIA.	<u>9.5</u>	<u>0.146</u>
EXIT ANGLE	<u>8°</u>	<u>15°</u>
<b>LOCATION</b>	<b>Left Side Exhausting Down</b>	
X STA	<u>23.775</u>	
Y STA	<u>1.75</u>	
Z STA	<u>5.561</u>	
<b>GAS</b>	<hr/>	

TABLE III. MODEL COMPONENT DIMENSIONS (Concluded)

<b>MODEL COMPONENT:</b>	<u>N<sub>41</sub></u>	
<b>GENERAL DESCRIPTION:</b>	<u>Reaction Control System Right Side Pitch/Roll</u>	
<u>Nozzles Firing Upward Past Vertical Fin</u>		
<hr/>		
<hr/>		
<b>DRAWING NUMBER:</b>	<hr/>	
<b><u>DIMENSIONS:</u></b>	<b><u>FULL-SCALE</u></b>	<b><u>MODEL-SCALE</u></b>
NUMBER OF NOZZLES	<u>2</u>	<u>2</u>
EXPANSION RATIO	<u>20</u>	<u>7.37</u>
EXIT DIA.	<u>9.5</u>	<u>0.146</u>
EXIT ANGLE	<u>8°</u>	<u>15°</u>
LOCATION	<u>Right Side Exhausting Up</u>	
X STA	<u>23.775</u>	
Y STA	<u>1.75</u>	
Z STA	<u>7.686</u>	
GAS	<u> </u>	<u> </u>

- Notes:**
1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrow
  2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

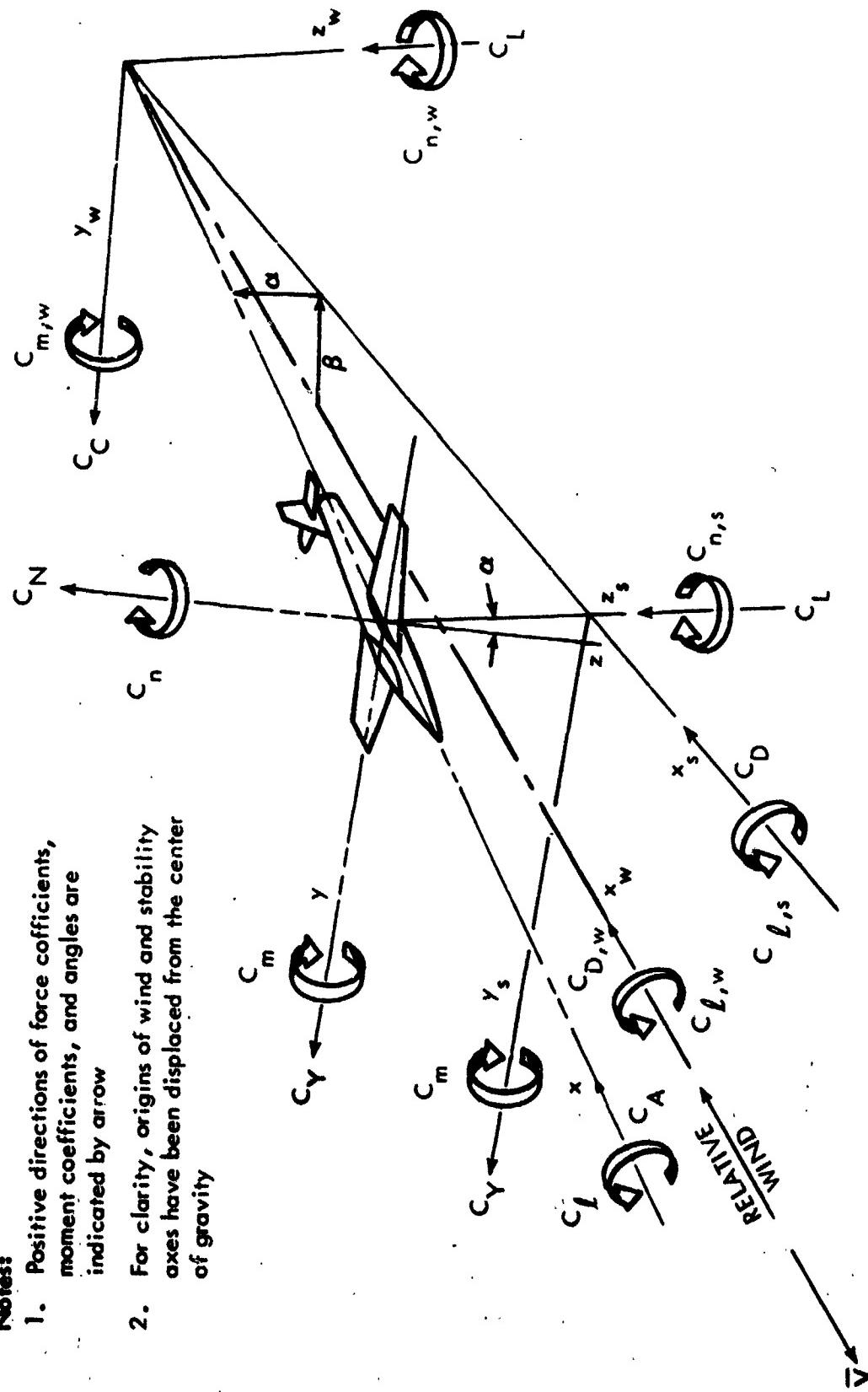


Figure 1. Axis Systems

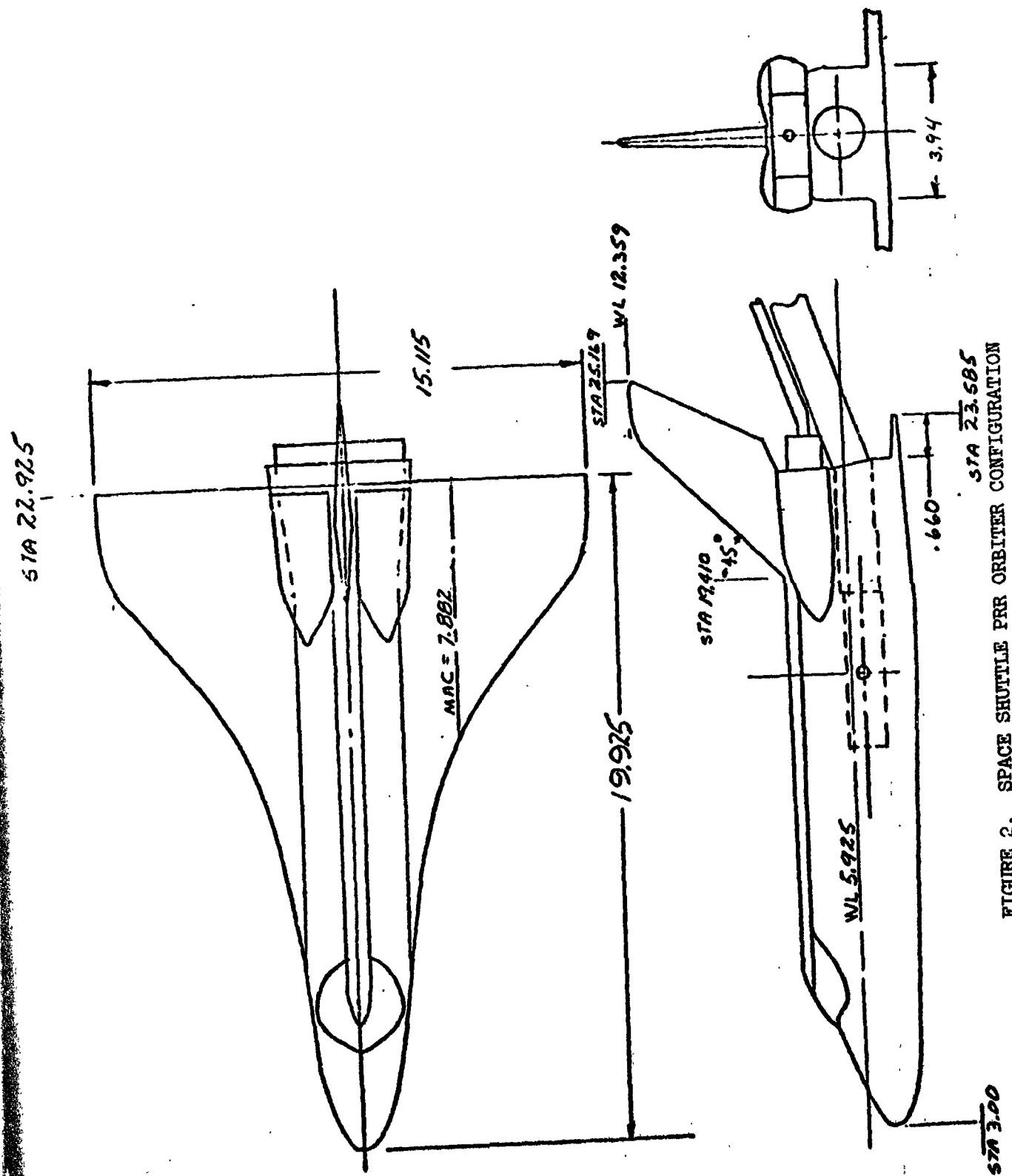


FIGURE 2. SPACE SHUTTLE PRR ORBITER CONFIGURATION

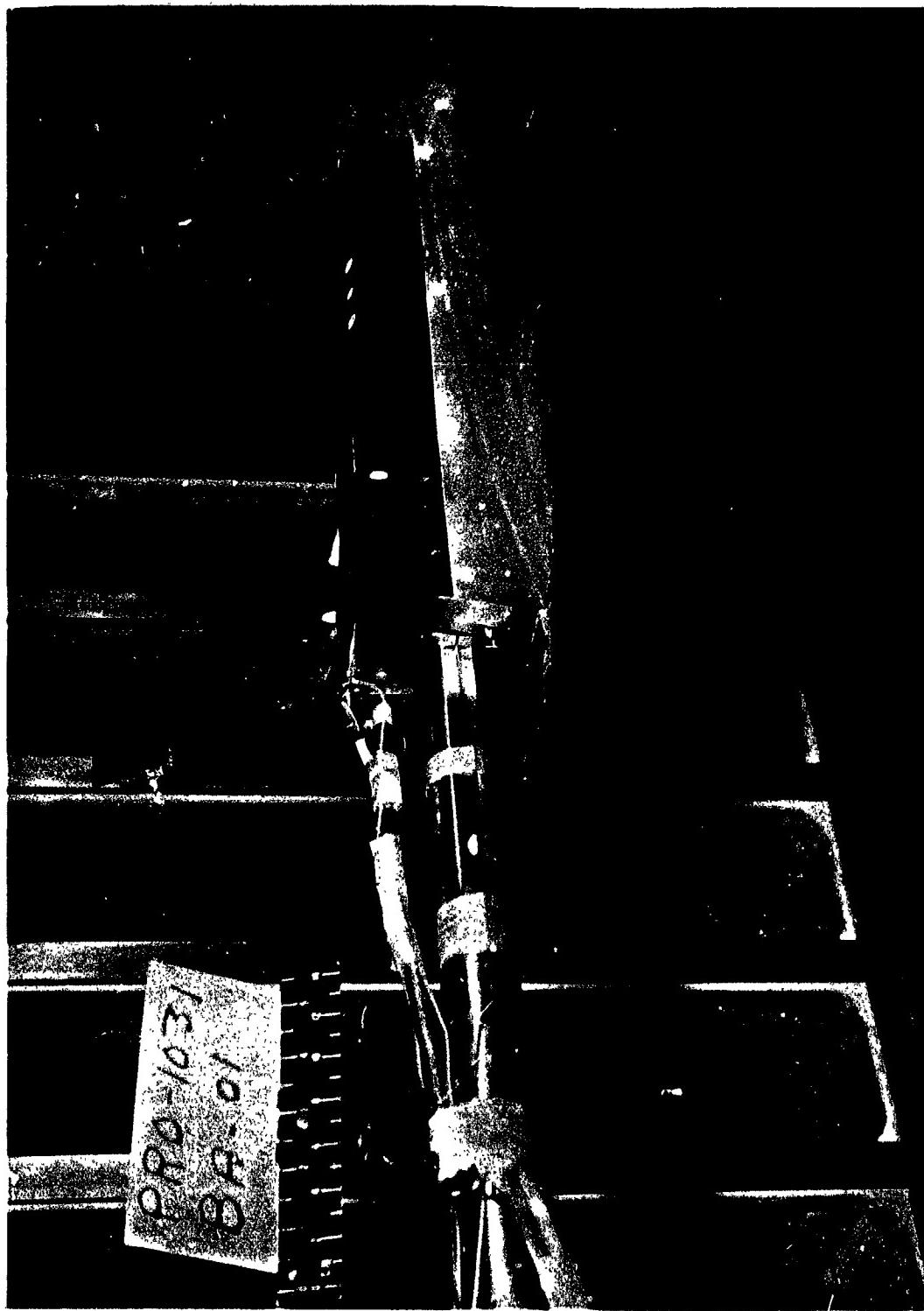
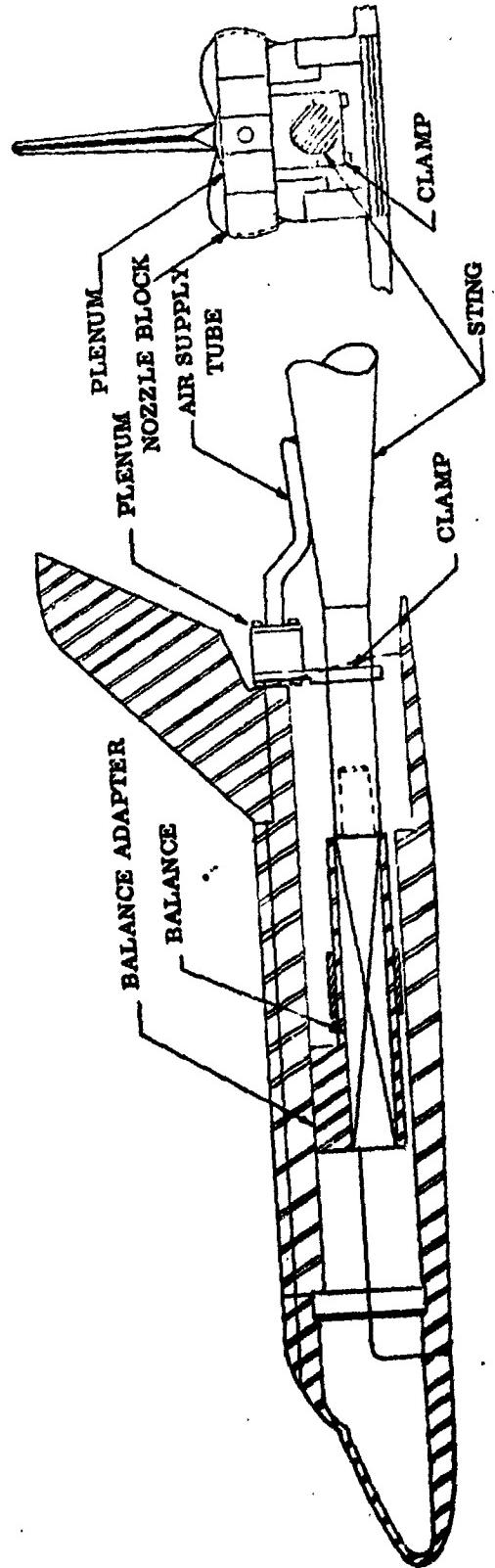


Figure 3. Photograph of .015 Scale Model Orbiter Installed in the NASA/LARC Unitary Plan Wind Tunnel



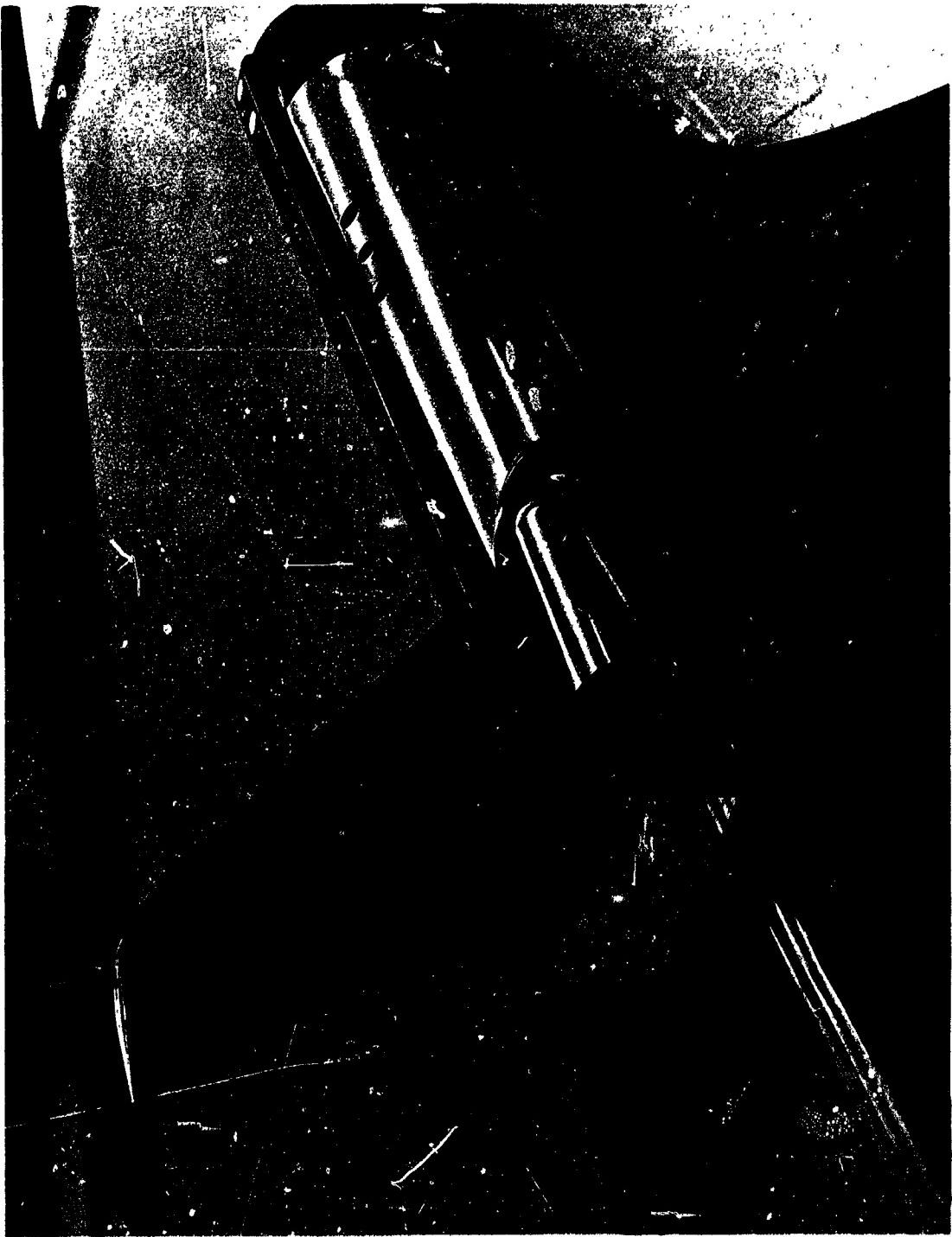
28

FIGURE 4. CUT-AWAY OF ORBITER SHOWING MODEL ASSEMBLY DETAILS

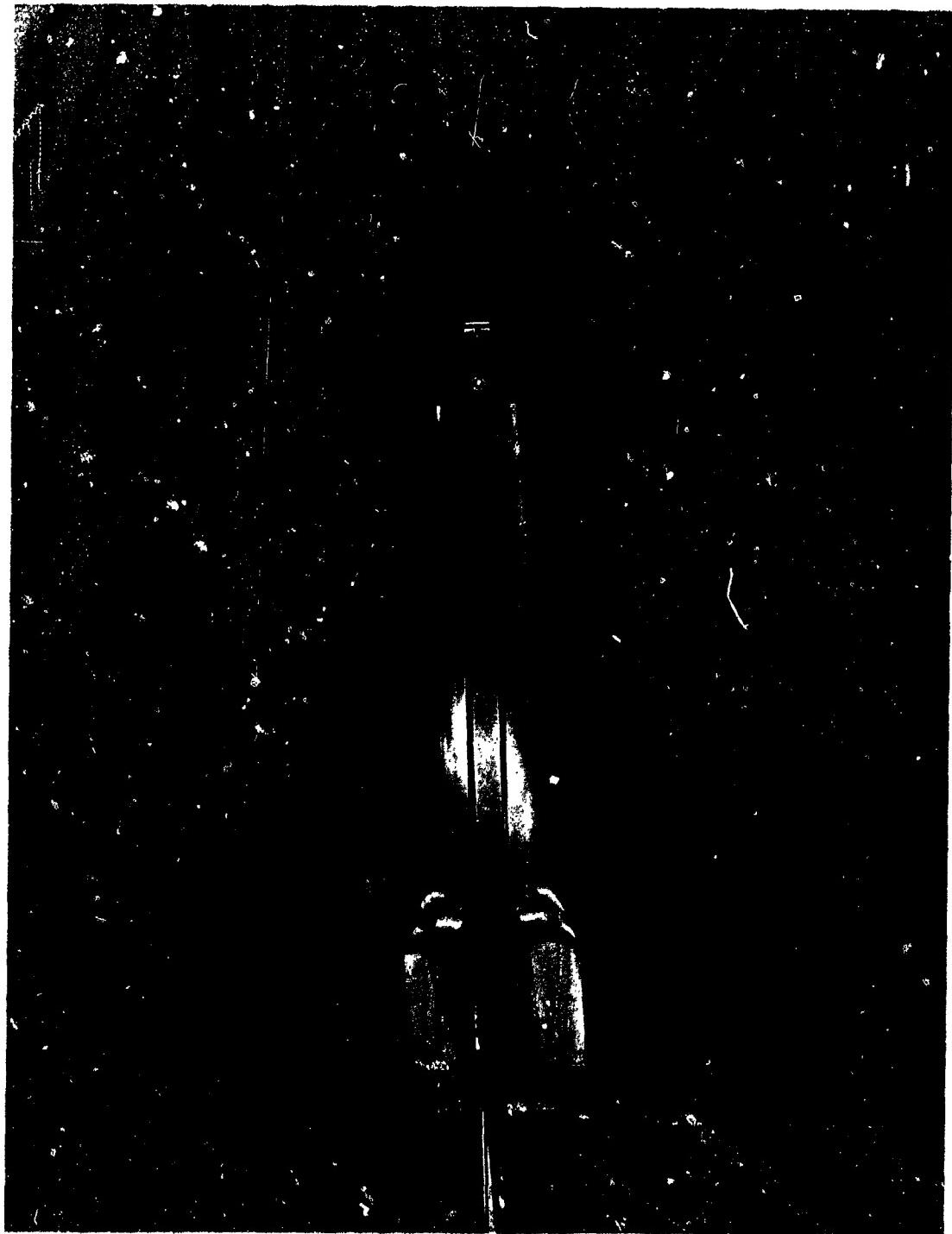
**Figure 5. Photograph of .015 scale Model Orbiter & RCS Nozzles.**



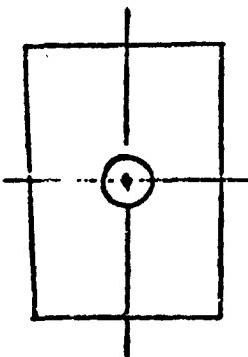
Figure 6. Photograph of .015 Scale Model Orbiter Depicting RCS Nozzle Installation.



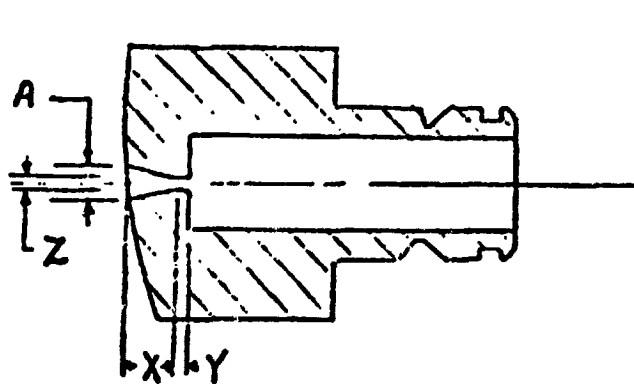
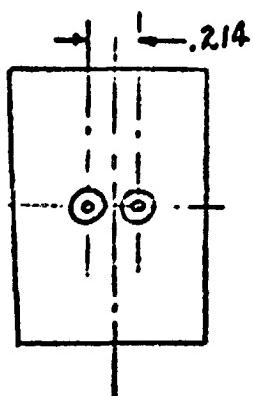
**Figure 7.** Photograph of .015 Scale Model Orbiter (Top View)



**Single Nozzle**



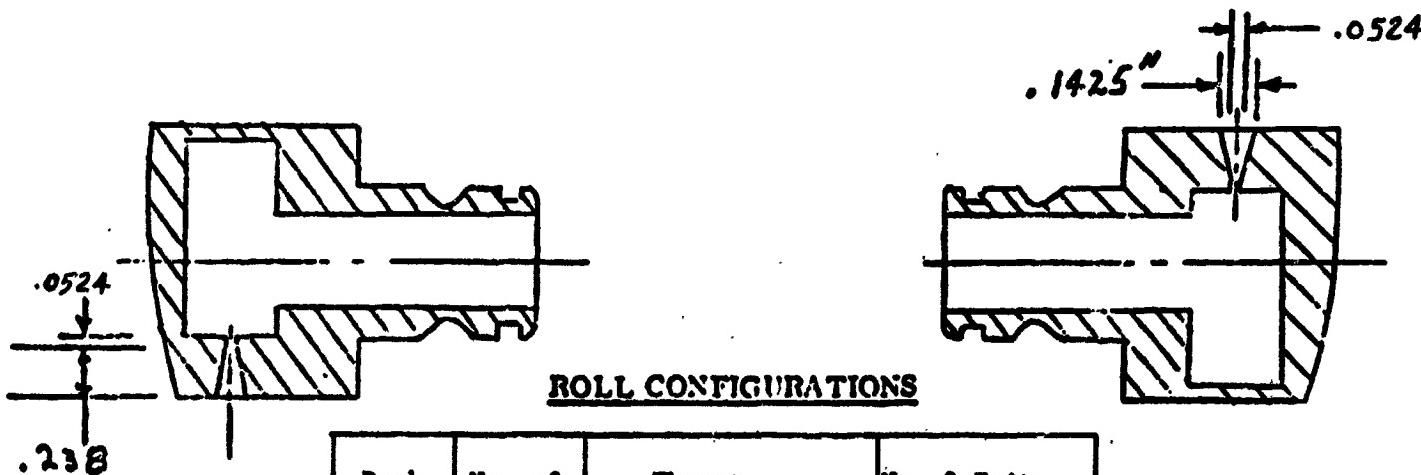
**Twin Nozzle**



**YAW CONFIGURATIONS**

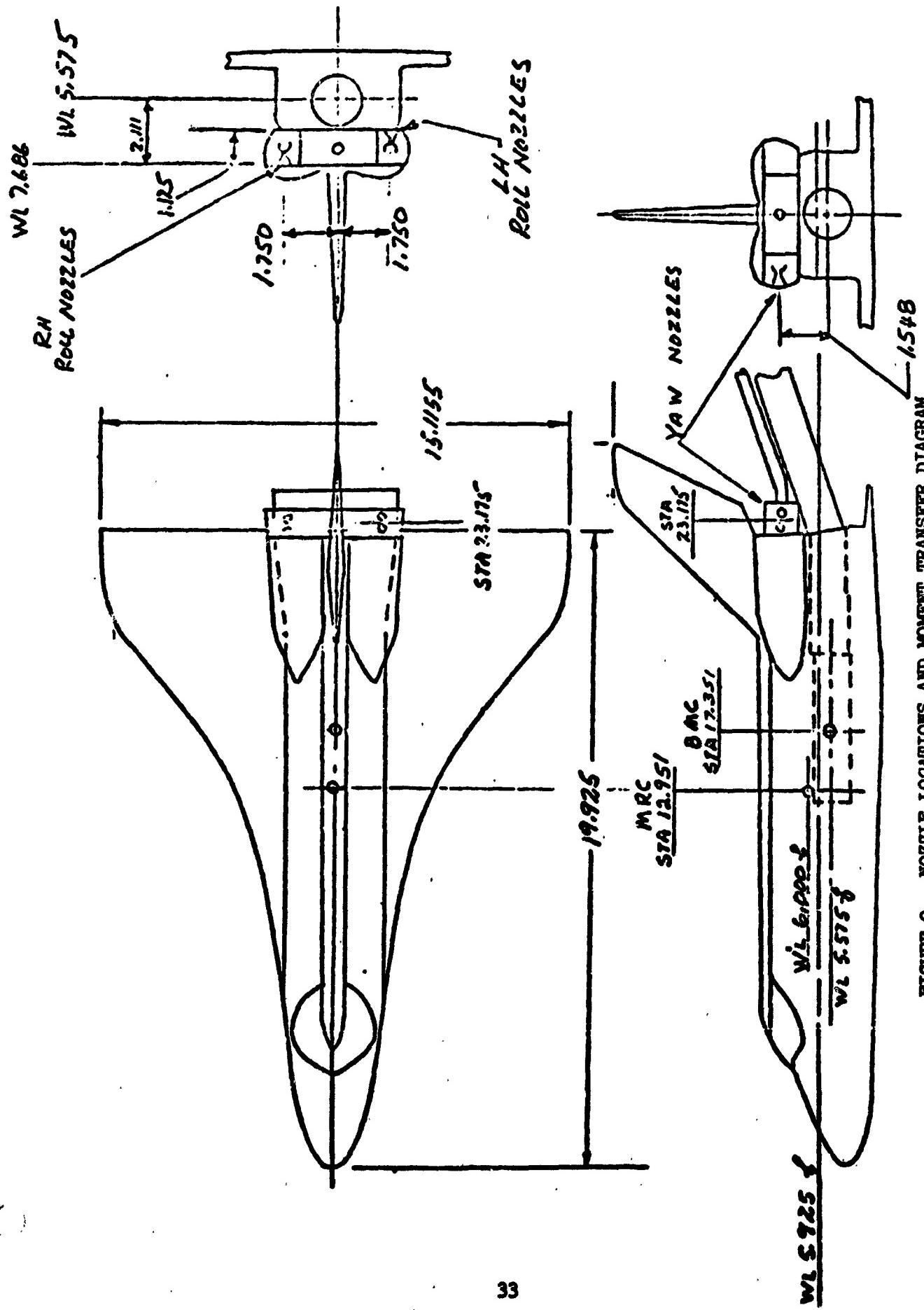
Dash No.	No. of Nozzles	X		Z		A		Exp. Ratio
		X	Y	Dia	Area	Dia	Area	
-33	2	.238	.524	.0524	.002156	.1425	.0159	2.72
-35	2	.169	.0883	.0883	.00612	.1425	.0159	1.61
-37	2	.199	.0748	.0748	.004394	.1425	.0159	1.91
-39	1	.337	.0741	.0741	.004312	.2015	.0319	2.72

**ROLL CONFIGURATIONS**



Dash No.	No. of Nozzles	Throat		No. 2 Exit	
		Dia.	Area	Dia.	Area
-29	2	.0524	.002156	.1425	.0159
-31	2	.0524	.002156	.1425	.0159

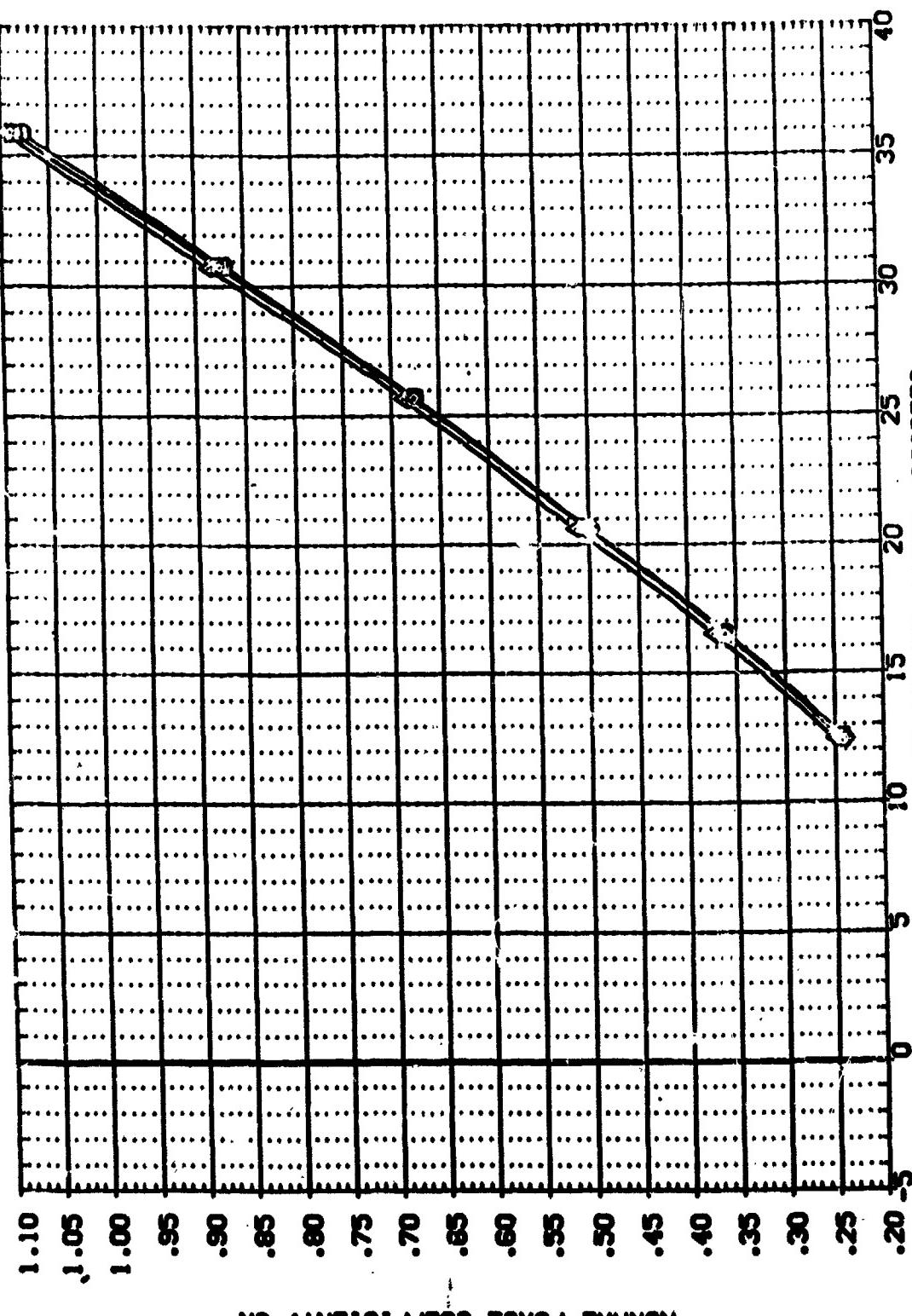
**FIGURE 8. DETAILS OF NOZZLE GEOMETRY**



**DATA FIGURES**

DATA SET SPEC. CONFIGURATION DESCRIPTION  
 (CROSS) MA-7, SPAN 1031, ROCKWELL FRR CONF.  
 (CROSS) MA-7, SPAN 1031, ROCKWELL FRR CONF.  
 (CROSS) MA-7, SPAN 1031, ROCKWELL FRR CONF.  
 (CROSS) MA-7, SPAN 1031, ROCKWELL FRR CONF.

REFERENCE INFORMATION  
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 DREF 12.9510 INCHES  
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 ZREF 6.0000 INCHES  
 SCALE 0.05

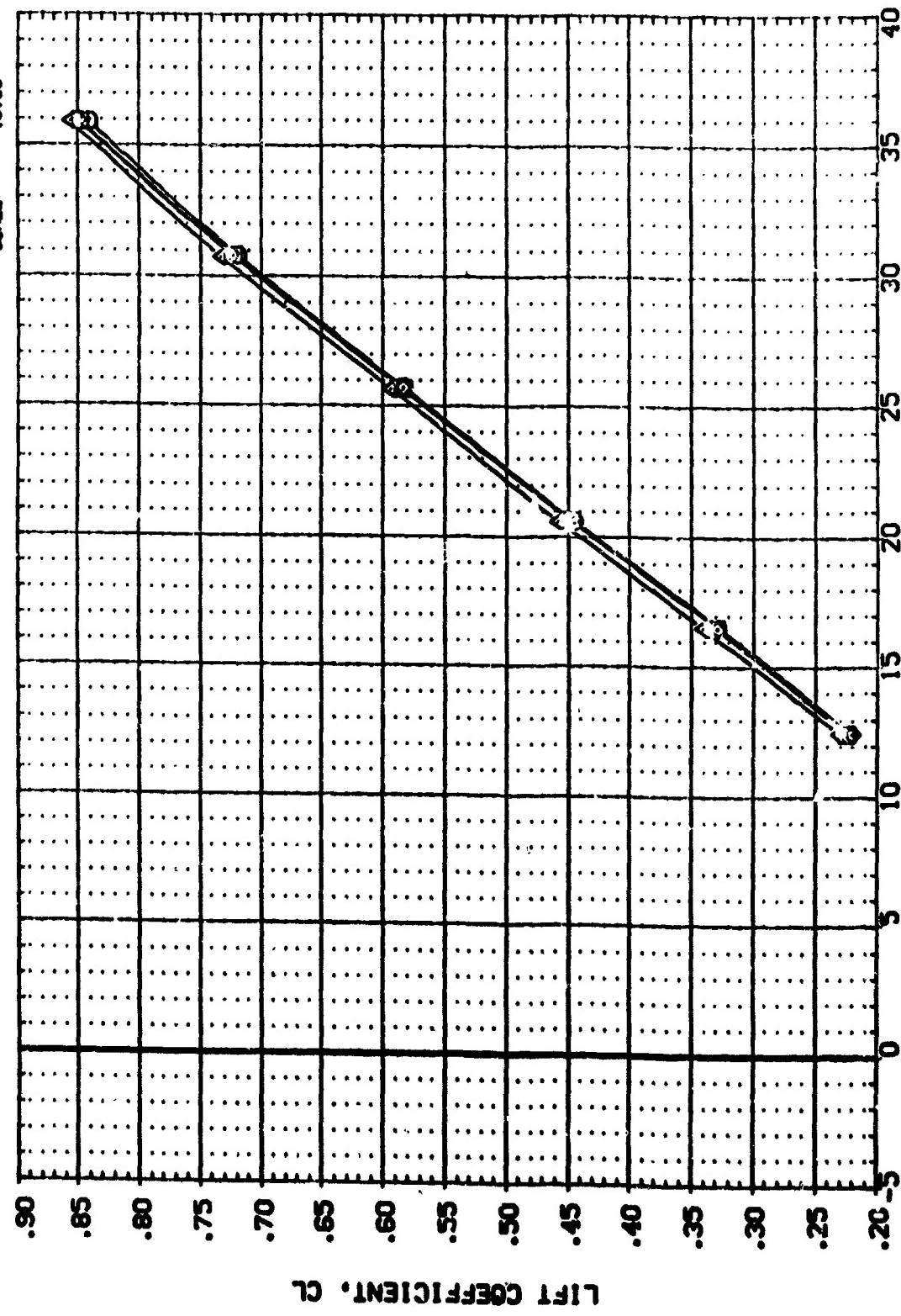


BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 1 MILLION)

C<sub>MACH</sub> = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CNS-021) O MA-7, UPV 1001, ROCKWELL PROG. COF.  
 (CNS-030) □ MA-7, UPV 1001, ROCKWELL PROG. COF.  
 (CNS-038) X MA-7, UPV 1001, ROCKWELL PROG. COF.  
 (CNS-070) △ MA-7, UPV 1001, ROCKWELL PROG. COF.

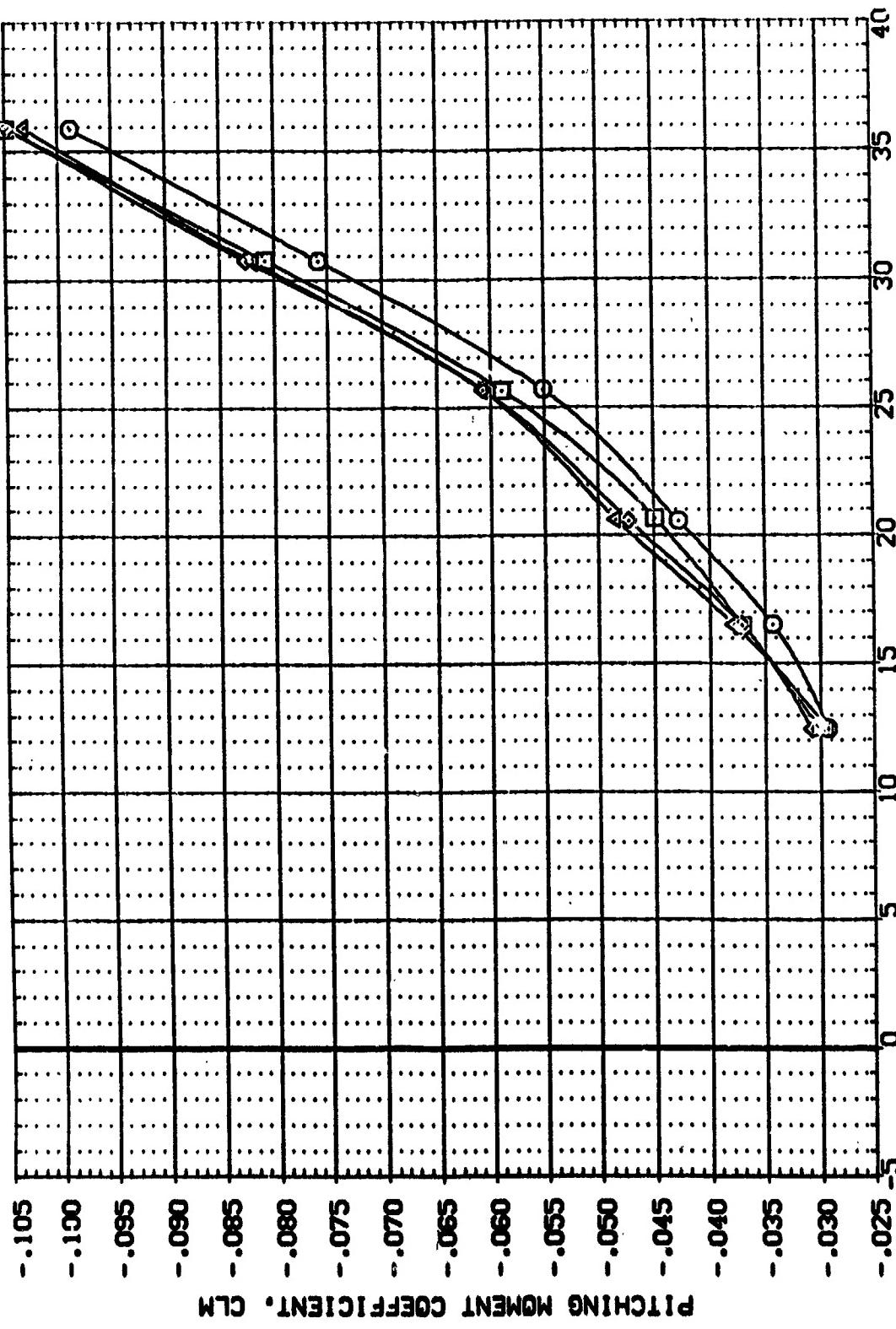
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 XREF 12.9510 INCHES  
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 ZREF 6.0000 INCHES  
 SCALE .0150



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 1 MILLION)  
 CAMACH = 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	DATA
(CPD021)	MA-7, UPNT	1031. ROCKWELL PER
(CPD040)	MA-7, UPNT	1031. ROCKWELL PER
(CPD058)	MA-7, UPNT	1031. ROCKWELL PER
(CPD070)	MA-7, UPNT	1031. ROCKWELL PER

		REFERENCE INFORMATION	
BETA	PO-JET	RNL	
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.000	.000	1.000	LREF
.000	.000	1.000	BREF
.000	.000	1.000	XMRP
.000	.000	1.000	ZMRP
.000	.000	1.000	SCRF

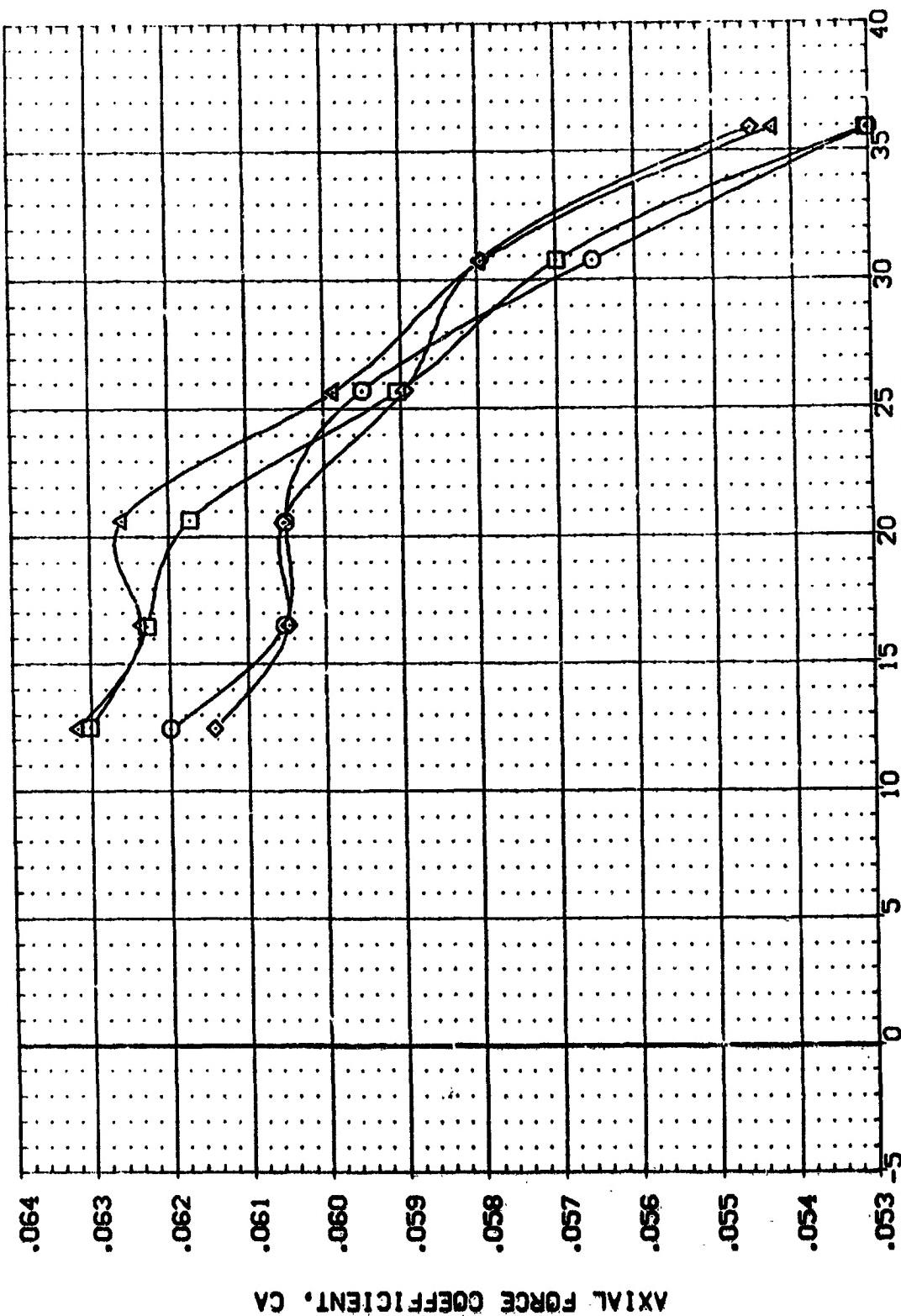


## BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 1 MILLION)

**CAJIMACH = 4.00**

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 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
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 ZMRP 6.0000 INCHES  
 SCALE .3150

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	PO-JET	RNL
(CPD021)	MA-7-UPVT 1031-ROCKWELL PRR ORB. CONF.: BVTN4	.000	.000	1.000
(CPD040)	MA-7-UPVT 1031-ROCKWELL PRR ORB. CONF.: BVTN40	.000	.000	1.000
(CPD058)	MA-7-CART 1031-ROCKWELL PRR ORB. CONF.: BVTN41	.000	.000	1.000
(CPD070)	MA-7-JET 1031-ROCKWELL PRR ORB. CONF.: BVTN41	.000	.000	1.000



BASIC CONFIGURATION DATA REPEATABILITY (RNL/L = 1 MILLION)

MACH = 4.00

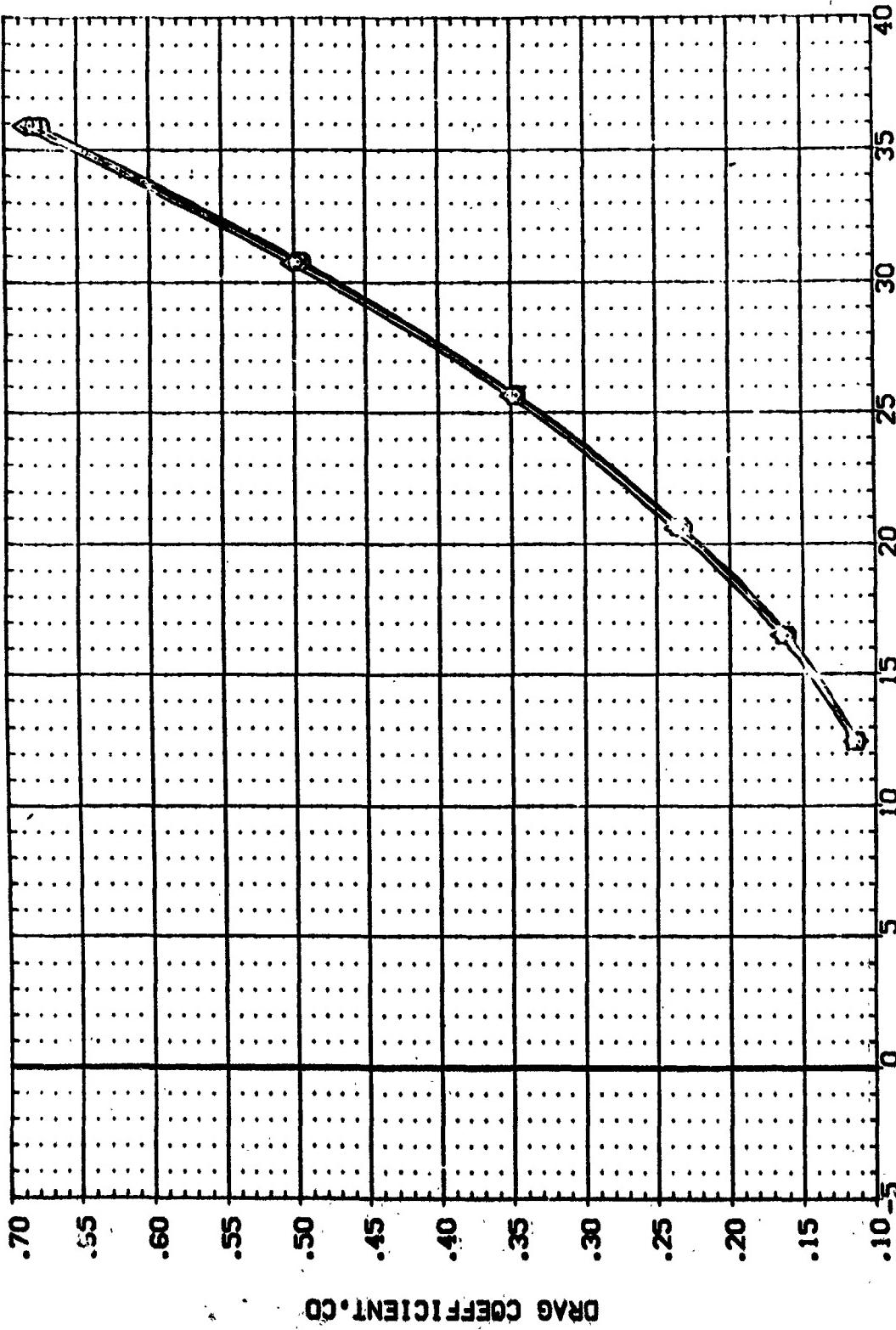
PAGE 4

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CP-021)	□	MA-7, UPN 1031, ROCKWELL FRR DRB, CONF: BMTN4
(CP-040)	□	MA-7, UPN 1031, ROCKWELL FRR DRB, CONF: BMTN40
(CP-058)	X	MA-7, UPN 1031, ROCKWELL FRR DRB, CONF: BMTN41
(CP-070)	X	MA-7, UPN 1031, ROCKWELL FRR DRB, CONF: BMTN41

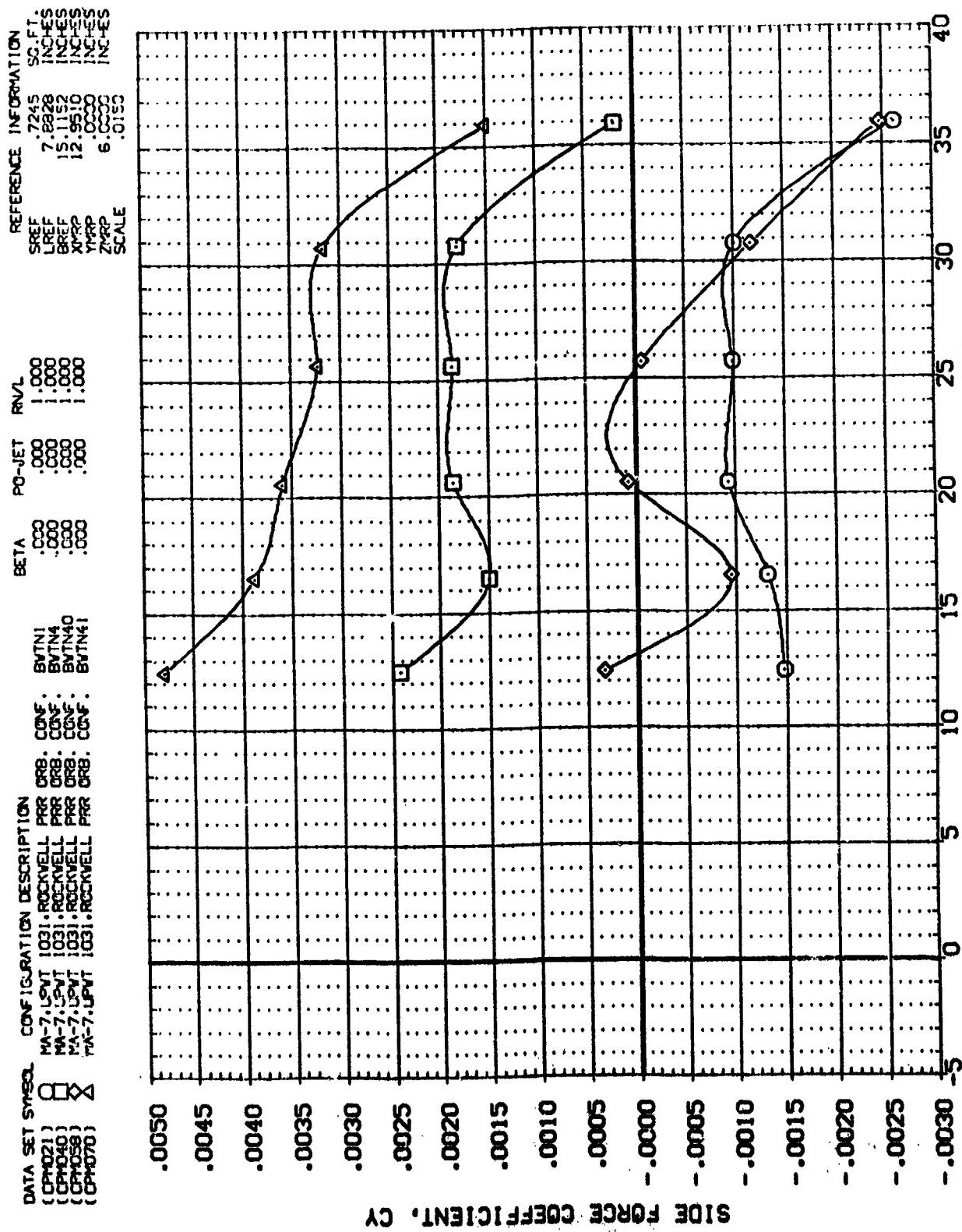
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YTRP	.00000	INCHES
ZTRP	6.00000	INCHES
SCALE	.0150	



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 1 MILLION)  
(MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (DPH021) MA-7-LWT 1031-ROCKWELL PRR ORB. CONF. BVTN4  
 (DPH040) MA-7-LWT 1031-ROCKWELL PRR ORB. CONF. BVTN40  
 (DPH058) MA-7-LWT 1031-ROCKWELL PRR ORB. CONF. BVTN41  
 (DPH070) MA-7-LWT 1031-ROCKWELL PRR ORB. CONF. BVTN41



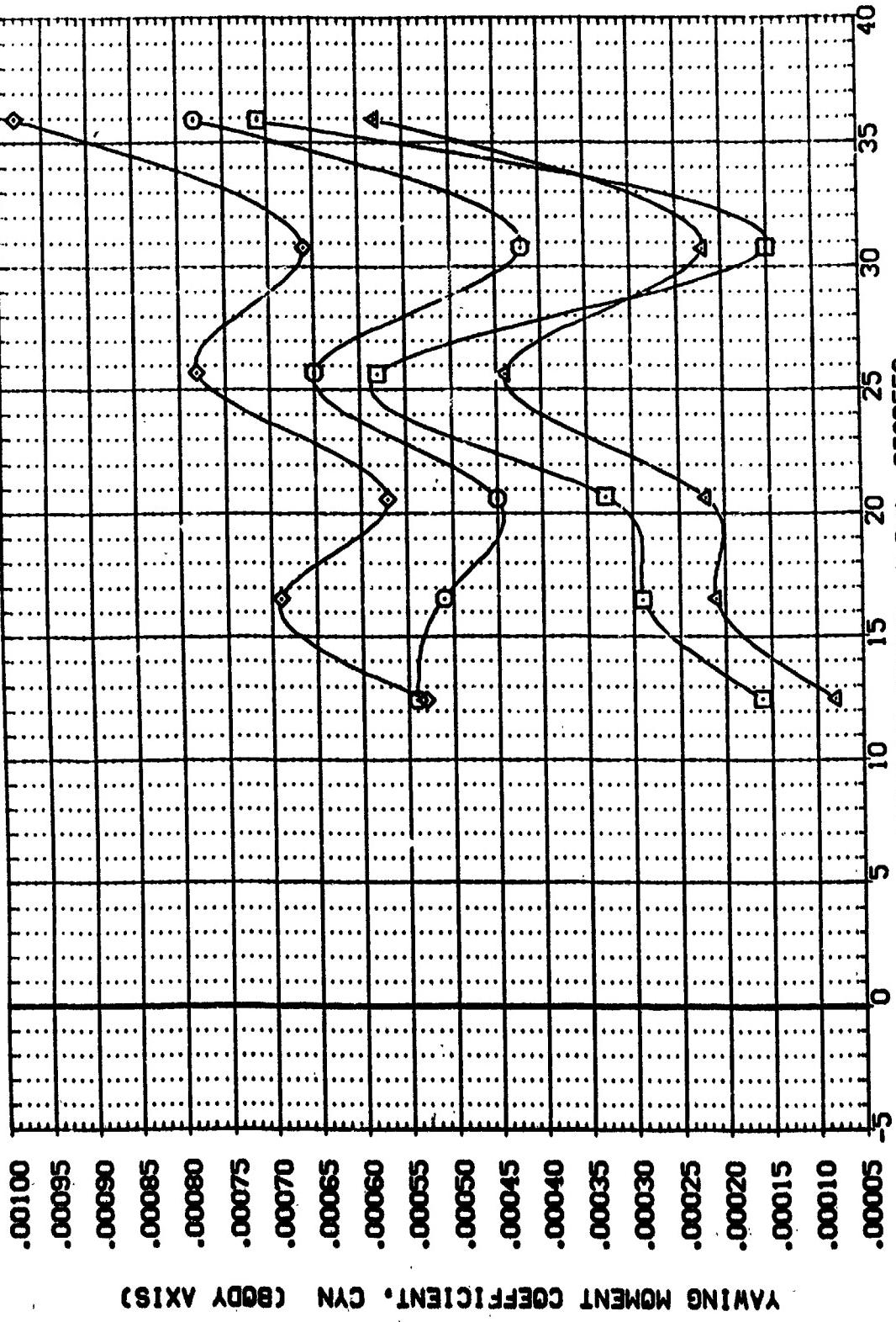
BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 1 MILLION)

CAMMACH = 4.00

PAGE 6

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP7021) MA-7, UPIT 1031, ROCKWELL PRR CONF.  
 (CP7040) MA-7, UPIT 1031, ROCKWELL PRR CONF.  
 (CP7058) MA-7, UPIT 1031, ROCKWELL PRR CONF.  
 (CP7070) MA-7, UPIT 1031, ROCKWELL PRR CONF.

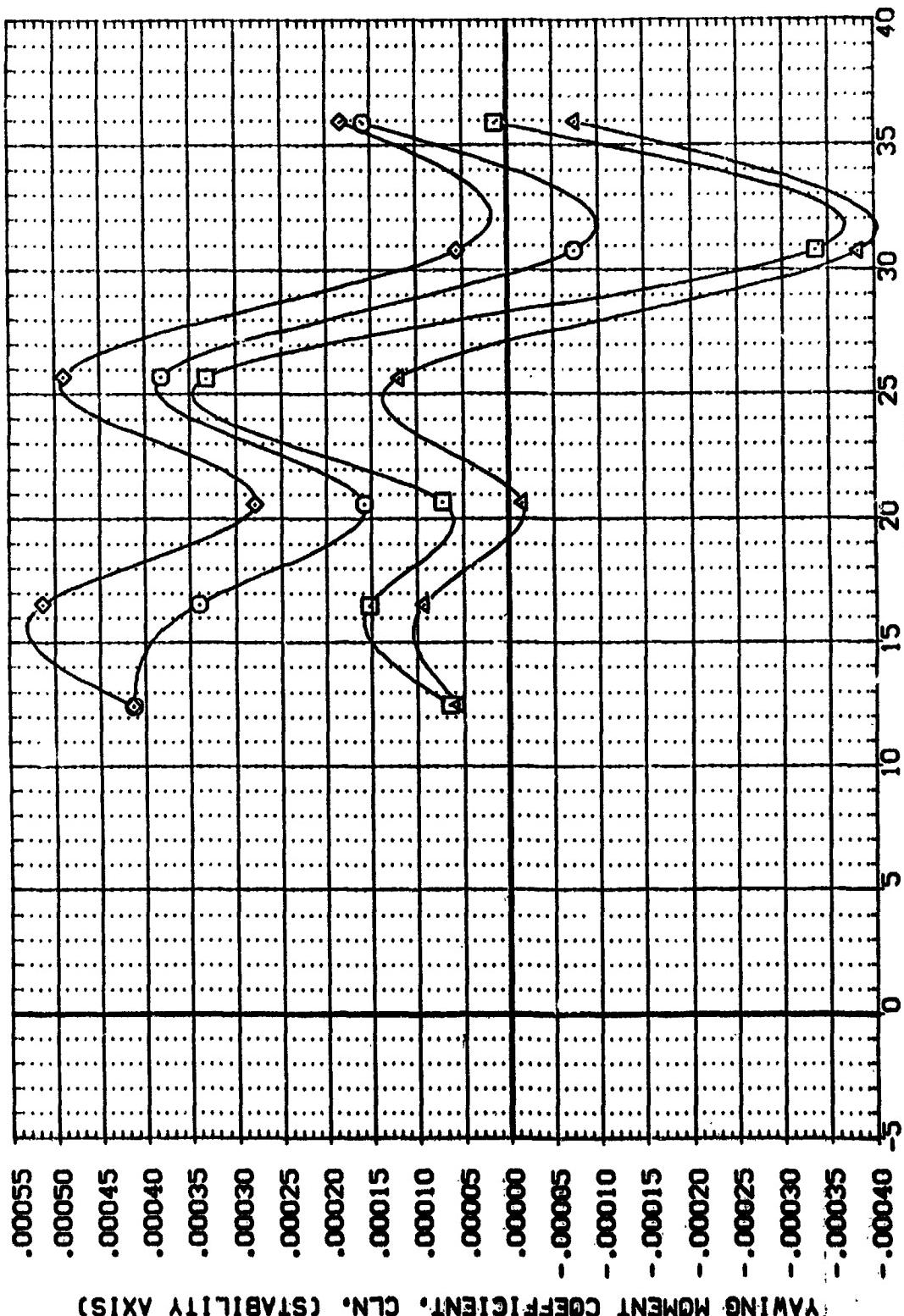
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 ZRP 6.00000 INCHES  
 SCALE .0150



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 1 MILLION)  
 (A)MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
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 (CP-320) X MA-7. UPN 1031. ROCKWELL PRR GRB. CGF. BVN4  
 (CP-328) X MA-7. UPN 1031. ROCKWELL PRR GRB. CGF. BVN40  
 (CP-329) X MA-7. UPN 1031. ROCKWELL PRR GRB. CGF. BVN41

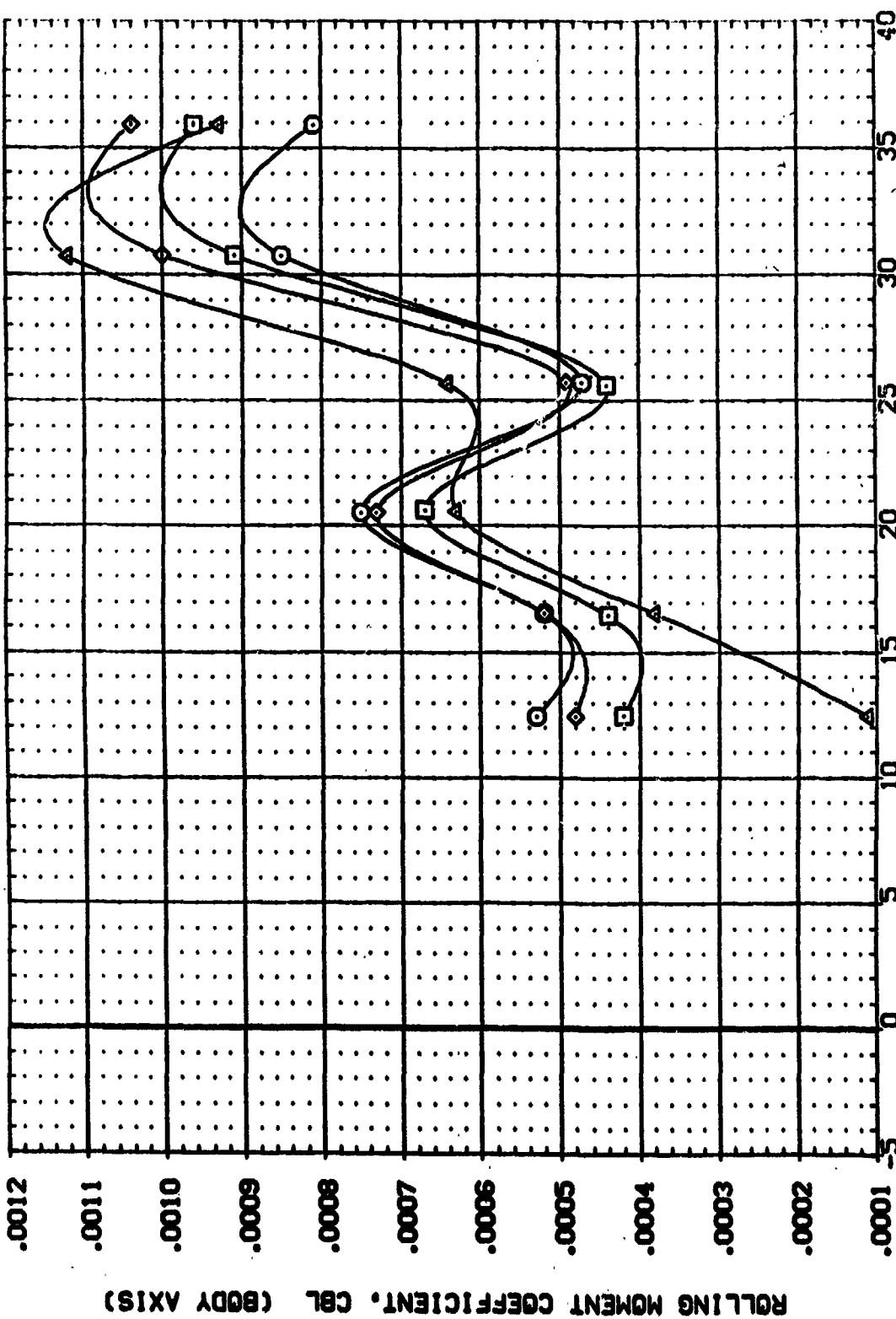
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 ZRP 6.0000 INCHES  
 SCALE .0150



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 1 MILLION)  
 (MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (OPH021) MA-7, UPVT 1031, ROCKETT PRR 758. CONF.  
 (OPH022) MA-7, UPVT 1031, ROCKETT PRR 758. CONF.  
 (OPH023) MA-7, UPVT 1031, ROCKETT PRR 758. CONF.  
 (OPH024) MA-7, UPVT 1031, ROCKETT PRR 758. CONF.

REFERENCE INFORMATION  
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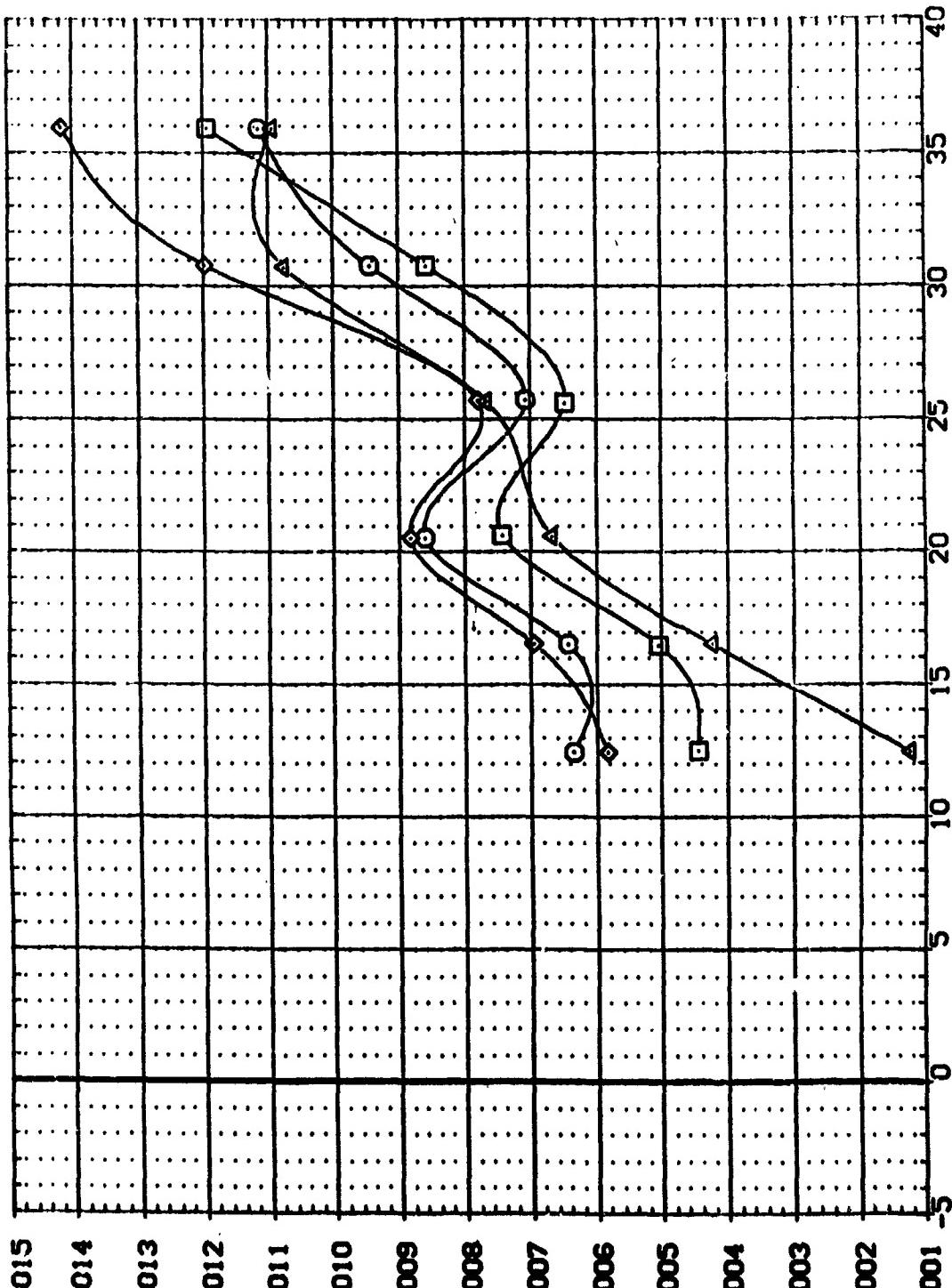
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(CP03)	MA-7-LPV1	1031, ROCKWELL	PRR	CONF.	BVTN4
(CP05)	MA-7-LPV1	1031, ROCKWELL	PRR	CONF.	BVTN4D
(CP07)	MA-7-LPV1	1031, ROCKWELL	PRR	CONF.	BVTN4I

REFERENCE INFORMATION

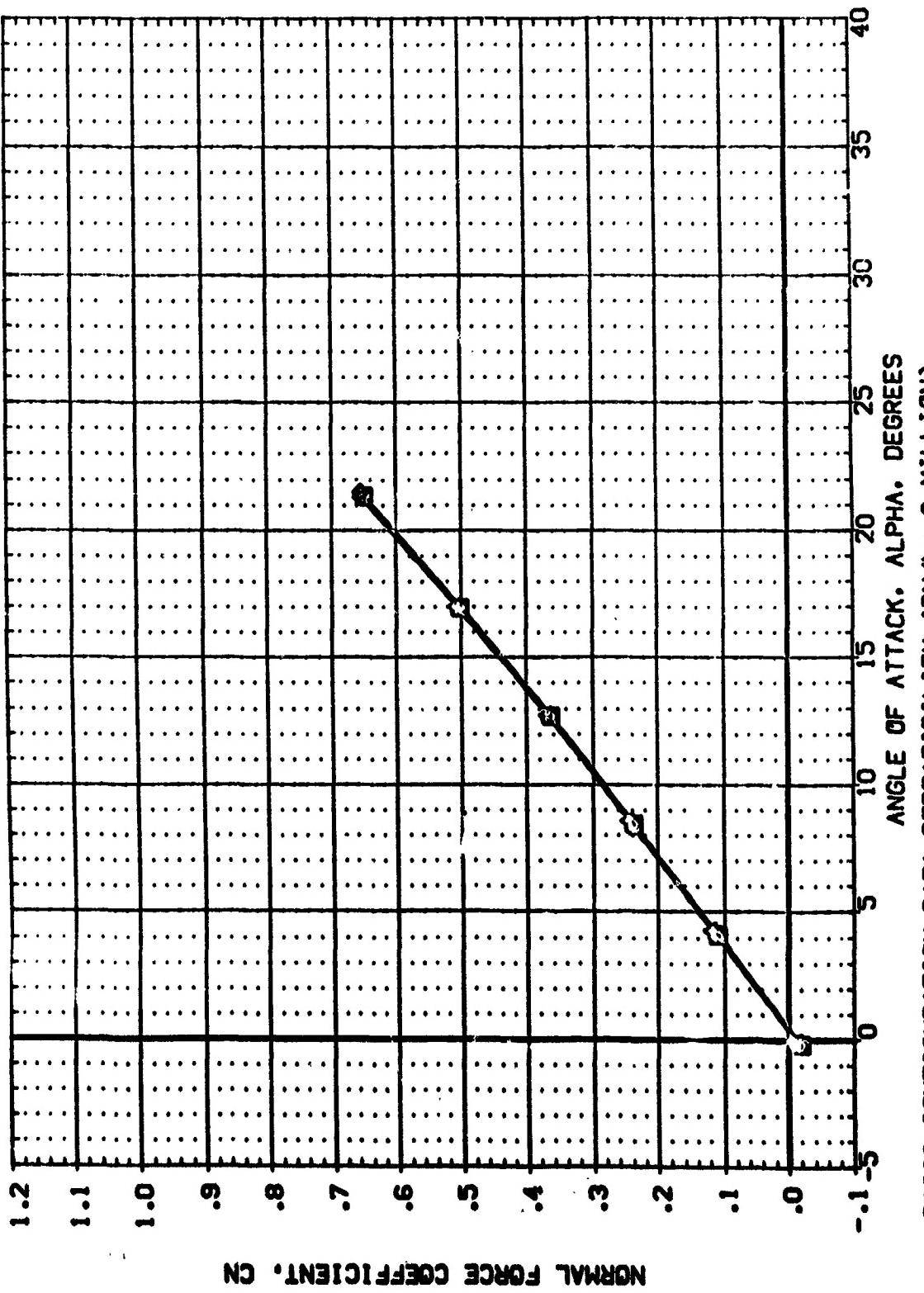
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YHFP	6.0000	SO. FT.	10000
ZHFP	.0150	SO. FT.	10000
SCALE			



ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 1 MILLION)  
C(MACH = 4.00

DATA SET SPEED	CONFIGURATION DESCRIPTION	RN/L	BETA	P0-JET	RN/L	REFERENCE INFORMATION
(BPO16)	MA-7. UP/UT	.000	.000	.000	.7245	SQ. FT.
(BPO26)	MA-7. UP/UT	.000	.000	.000	.7878	INCHES
(BPO35)	MA-7. UP/UT	.000	.000	.000	15.1152	INCHES
(BPO37)	MA-7. UP/UT	.000	.000	.000	12.9510	INCHES
	10.11. ROCKWELL PRR 058; CCF				6.0000	INCHES
	10.11. ROCKWELL PRR 058; CCF					
	10.11. ROCKWELL PRR 058; CCF					
	10.11.1. ROCKWELL PRR 058; CCF					



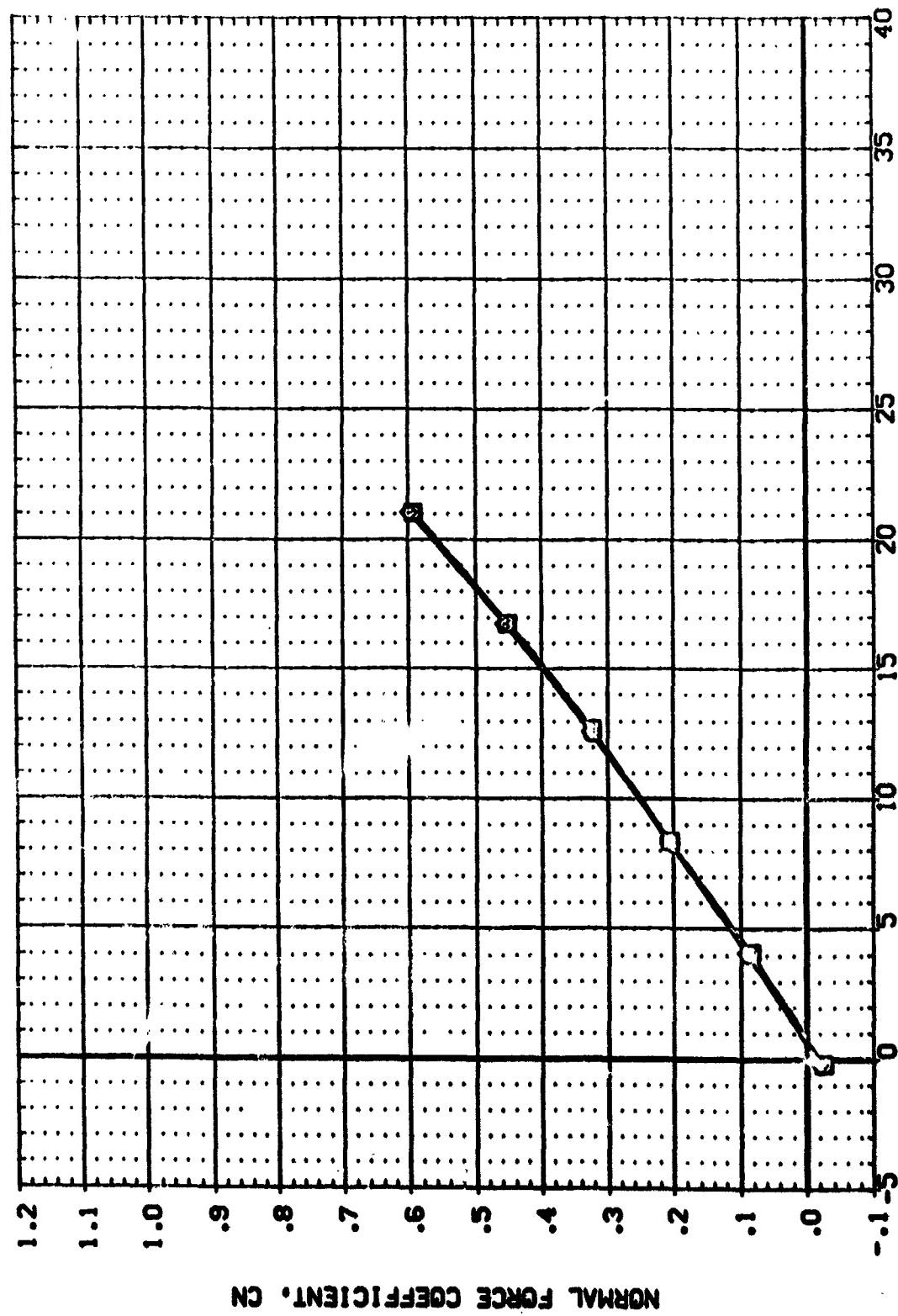
PAGE 11

BASIC CONFIGURATION DATA REPEATABILITY ( $RN/L = 3 \text{ MILLION}$ )

$(MACH = 2.50)$

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 (BPH036) MA-7, UPNT 1031, ROCKWELL PRR 088, CONN: BVTN4  
 (BPH055) MA-7, UPNT 1031, ROCKWELL PRR 088, CONN: BVTN9  
 (BPH057) MA-7, UPNT 1031, ROCKWELL PRR 088, CONN: BVTN11

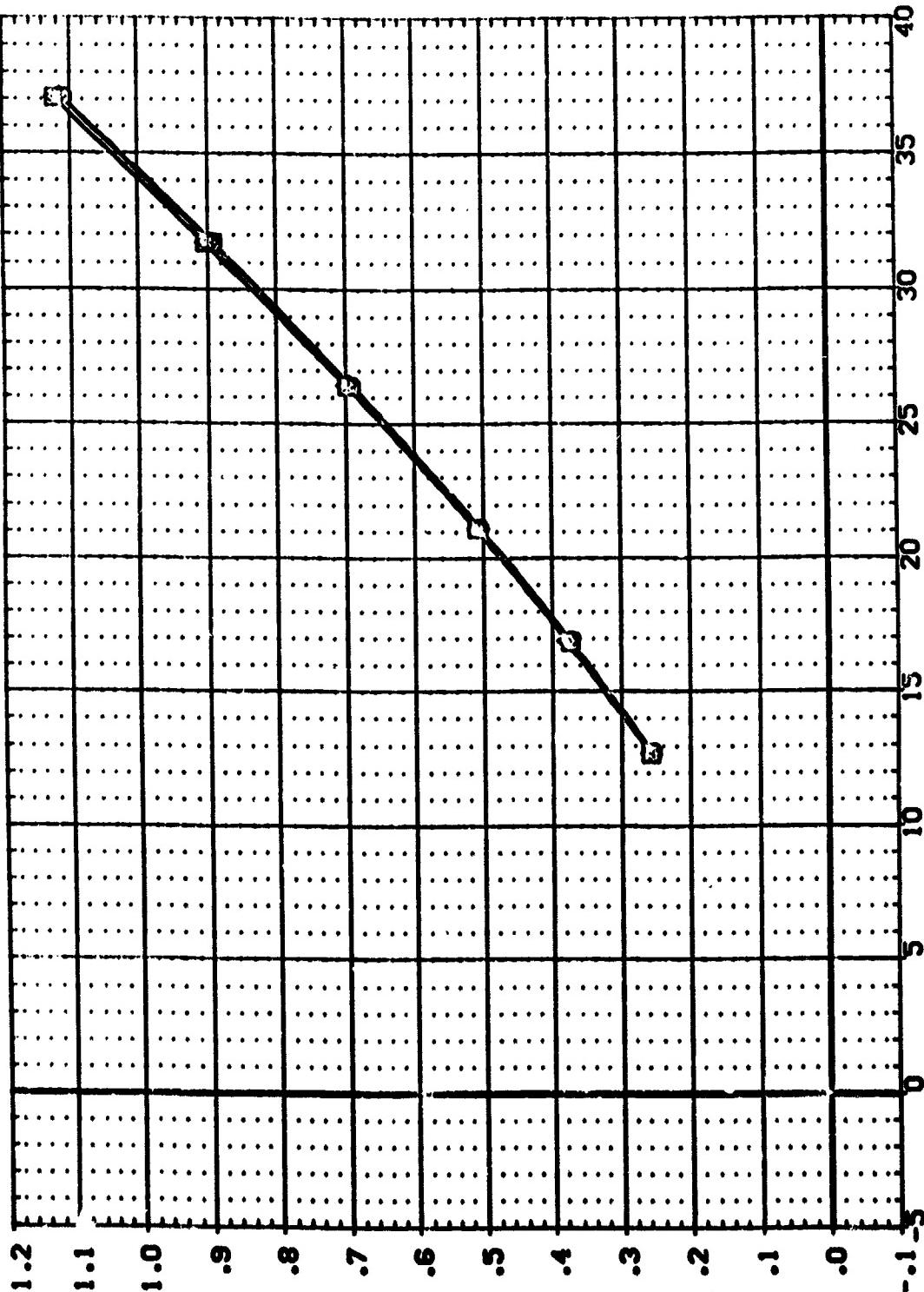
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 SCALE .0150



BASIC CONFIGURATION DATA REPEATABILITY (CRN/L = 3 MILLION)  
 $(\delta MACH = 2.95)$

DATA SET SYMBOL      CONFIGURATION DESCRIPTION      POS. COF. CONF.  
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 (BPH036)      MA-7.5PNT      1031-ROCKWELL PRR      .000      3.000  
 (BPH055)      MA-7.5PNT      1031-ROCKWELL PRR      .000      3.000  
 (BPH067)      MA-7.5PNT      1031-ROCKWELL PRR      .000      3.000

REFERENCE INFORMATION      SQ.FT.  
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 ZRP      6.0000      INCHES  
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NORMAL FORCE COEFFICIENT, CN

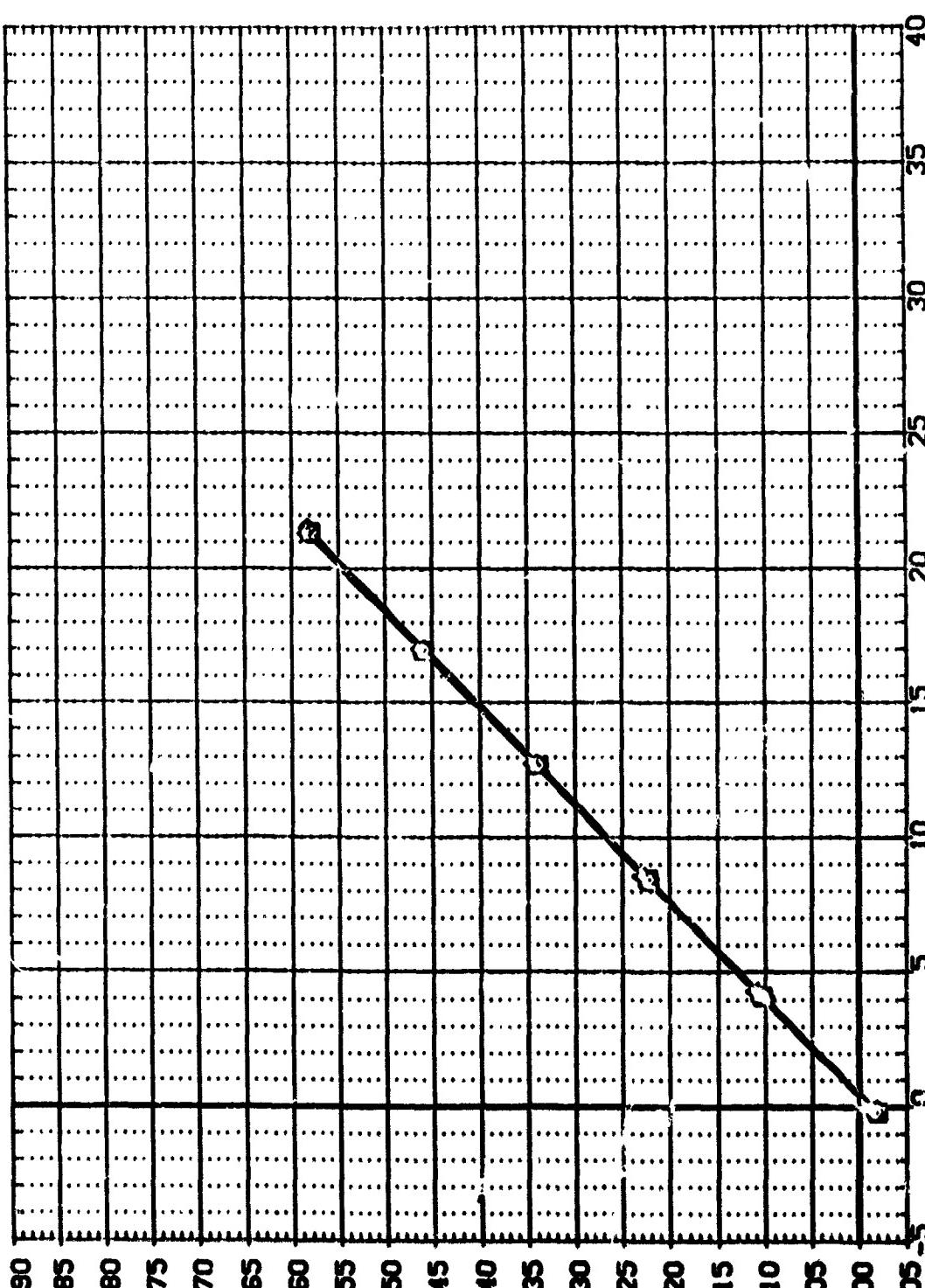
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DATA SET SYMBOL CONFIGURATION DESCRIPTION

DATA SET SYMBOL	MA-7. UPWT 1031. ROCKWELL CRG. COF.	BTN1	BTN2	BTN3	BTN4	BTN5	BTN6	BTN7	BTN8	BTN9	BTN10	BTN11	BTN12	BTN13	BTN14	BTN15	BTN16	BTN17	BTN18	BTN19	BTN20	BTN21	BTN22	BTN23	BTN24	BTN25	BTN26	BTN27	BTN28	BTN29	BTN30	BTN31	BTN32	BTN33	BTN34	BTN35	BTN36	BTN37	BTN38	BTN39	BTN40	BTN41	BTN42	BTN43	BTN44	BTN45	BTN46	BTN47	BTN48	BTN49	BTN50	BTN51	BTN52	BTN53	BTN54	BTN55	BTN56	BTN57	BTN58	BTN59	BTN60	BTN61	BTN62	BTN63	BTN64	BTN65	BTN66	BTN67	BTN68	BTN69	BTN70	BTN71	BTN72	BTN73	BTN74	BTN75	BTN76	BTN77	BTN78	BTN79	BTN80	BTN81	BTN82	BTN83	BTN84	BTN85	BTN86	BTN87	BTN88	BTN89	BTN90	BTN91	BTN92	BTN93	BTN94	BTN95	BTN96	BTN97	BTN98	BTN99	BTN100	BTN101	BTN102	BTN103	BTN104	BTN105	BTN106	BTN107	BTN108	BTN109	BTN110	BTN111	BTN112	BTN113	BTN114	BTN115	BTN116	BTN117	BTN118	BTN119	BTN120	BTN121	BTN122	BTN123	BTN124	BTN125	BTN126	BTN127	BTN128	BTN129	BTN130	BTN131	BTN132	BTN133	BTN134	BTN135	BTN136	BTN137	BTN138	BTN139	BTN140	BTN141	BTN142	BTN143	BTN144	BTN145	BTN146	BTN147	BTN148	BTN149	BTN150	BTN151	BTN152	BTN153	BTN154	BTN155	BTN156	BTN157	BTN158	BTN159	BTN160	BTN161	BTN162	BTN163	BTN164	BTN165	BTN166	BTN167	BTN168	BTN169	BTN170	BTN171	BTN172	BTN173	BTN174	BTN175	BTN176	BTN177	BTN178	BTN179	BTN180	BTN181	BTN182	BTN183	BTN184	BTN185	BTN186	BTN187	BTN188	BTN189	BTN190	BTN191	BTN192	BTN193	BTN194	BTN195	BTN196	BTN197	BTN198	BTN199	BTN200	BTN201	BTN202	BTN203	BTN204	BTN205	BTN206	BTN207	BTN208	BTN209	BTN210	BTN211	BTN212	BTN213	BTN214	BTN215	BTN216	BTN217	BTN218	BTN219	BTN220	BTN221	BTN222	BTN223	BTN224	BTN225	BTN226	BTN227	BTN228	BTN229	BTN230	BTN231	BTN232	BTN233	BTN234	BTN235	BTN236	BTN237	BTN238	BTN239	BTN240	BTN241	BTN242	BTN243	BTN244	BTN245	BTN246	BTN247	BTN248	BTN249	BTN250	BTN251	BTN252	BTN253	BTN254	BTN255	BTN256	BTN257	BTN258	BTN259	BTN260	BTN261	BTN262	BTN263	BTN264	BTN265	BTN266	BTN267	BTN268	BTN269	BTN270	BTN271	BTN272	BTN273	BTN274	BTN275	BTN276	BTN277	BTN278	BTN279	BTN280	BTN281	BTN282	BTN283	BTN284	BTN285	BTN286	BTN287	BTN288	BTN289	BTN290	BTN291	BTN292	BTN293	BTN294	BTN295	BTN296	BTN297	BTN298	BTN299	BTN300	BTN301	BTN302	BTN303	BTN304	BTN305	BTN306	BTN307	BTN308	BTN309	BTN310	BTN311	BTN312	BTN313	BTN314	BTN315	BTN316	BTN317	BTN318	BTN319	BTN320	BTN321	BTN322	BTN323	BTN324	BTN325	BTN326	BTN327	BTN328	BTN329	BTN330	BTN331	BTN332	BTN333	BTN334	BTN335	BTN336	BTN337	BTN338	BTN339	BTN340	BTN341	BTN342	BTN343	BTN344	BTN345	BTN346	BTN347	BTN348	BTN349	BTN350	BTN351	BTN352	BTN353	BTN354	BTN355	BTN356	BTN357	BTN358	BTN359	BTN360	BTN361	BTN362	BTN363	BTN364	BTN365	BTN366	BTN367	BTN368	BTN369	BTN370	BTN371	BTN372	BTN373	BTN374	BTN375	BTN376	BTN377	BTN378	BTN379	BTN380	BTN381	BTN382	BTN383	BTN384	BTN385	BTN386	BTN387	BTN388	BTN389	BTN390	BTN391	BTN392	BTN393	BTN394	BTN395	BTN396	BTN397	BTN398	BTN399	BTN400	BTN401	BTN402	BTN403	BTN404	BTN405	BTN406	BTN407	BTN408	BTN409	BTN410	BTN411	BTN412	BTN413	BTN414	BTN415	BTN416	BTN417	BTN418	BTN419	BTN420	BTN421	BTN422	BTN423	BTN424	BTN425	BTN426	BTN427	BTN428	BTN429	BTN430	BTN431	BTN432	BTN433	BTN434	BTN435	BTN436	BTN437	BTN438	BTN439	BTN440	BTN441	BTN442	BTN443	BTN444	BTN445	BTN446	BTN447	BTN448	BTN449	BTN450	BTN451	BTN452	BTN453	BTN454	BTN455	BTN456	BTN457	BTN458	BTN459	BTN460	BTN461	BTN462	BTN463	BTN464	BTN465	BTN466	BTN467	BTN468	BTN469	BTN470	BTN471	BTN472	BTN473	BTN474	BTN475	BTN476	BTN477	BTN478	BTN479	BTN480	BTN481	BTN482	BTN483	BTN484	BTN485	BTN486	BTN487	BTN488	BTN489	BTN490	BTN491	BTN492	BTN493	BTN494	BTN495	BTN496	BTN497	BTN498	BTN499	BTN500	BTN501	BTN502	BTN503	BTN504	BTN505	BTN506	BTN507	BTN508	BTN509	BTN510	BTN511	BTN512	BTN513	BTN514	BTN515	BTN516	BTN517	BTN518	BTN519	BTN520	BTN521	BTN522	BTN523	BTN524	BTN525	BTN526	BTN527	BTN528	BTN529	BTN530	BTN531	BTN532	BTN533	BTN534	BTN535	BTN536	BTN537	BTN538	BTN539	BTN540	BTN541	BTN542	BTN543	BTN544	BTN545	BTN546	BTN547	BTN548	BTN549	BTN550	BTN551	BTN552	BTN553	BTN554	BTN555	BTN556	BTN557	BTN558	BTN559	BTN560	BTN561	BTN562	BTN563	BTN564	BTN565	BTN566	BTN567	BTN568	BTN569	BTN570	BTN571	BTN572	BTN573	BTN574	BTN575	BTN576	BTN577	BTN578	BTN579	BTN580	BTN581	BTN582	BTN583	BTN584	BTN585	BTN586	BTN587	BTN588	BTN589	BTN590	BTN591	BTN592	BTN593	BTN594	BTN595	BTN596	BTN597	BTN598	BTN599	BTN600	BTN601	BTN602	BTN603	BTN604	BTN605	BTN606	BTN607	BTN608	BTN609	BTN610	BTN611	BTN612	BTN613	BTN614	BTN615	BTN616	BTN617	BTN618	BTN619	BTN620	BTN621	BTN622	BTN623	BTN624	BTN625	BTN626	BTN627	BTN628	BTN629	BTN630	BTN631	BTN632	BTN633	BTN634	BTN635	BTN636	BTN637	BTN638	BTN639	BTN640	BTN641	BTN642	BTN643	BTN644	BTN645	BTN646	BTN647	BTN648	BTN649	BTN650	BTN651	BTN652	BTN653	BTN654	BTN655	BTN656	BTN657	BTN658	BTN659	BTN660	BTN661	BTN662	BTN663	BTN664	BTN665	BTN666	BTN667	BTN668	BTN669	BTN670	BTN671	BTN672	BTN673	BTN674	BTN675	BTN676	BTN677	BTN678	BTN679	BTN680	BTN681	BTN682	BTN683	BTN684	BTN685	BTN686	BTN687	BTN688	BTN689	BTN690	BTN691	BTN692	BTN693	BTN694	BTN695	BTN696	BTN697	BTN698	BTN699	BTN700	BTN701	BTN702	BTN703	BTN704	BTN705	BTN706	BTN707	BTN708	BTN709	BTN710	BTN711	BTN712	BTN713	BTN714	BTN715	BTN716	BTN717	BTN718	BTN719	BTN720	BTN721	BTN722	BTN723	BTN724	BTN725	BTN726	BTN727	BTN728	BTN729	BTN73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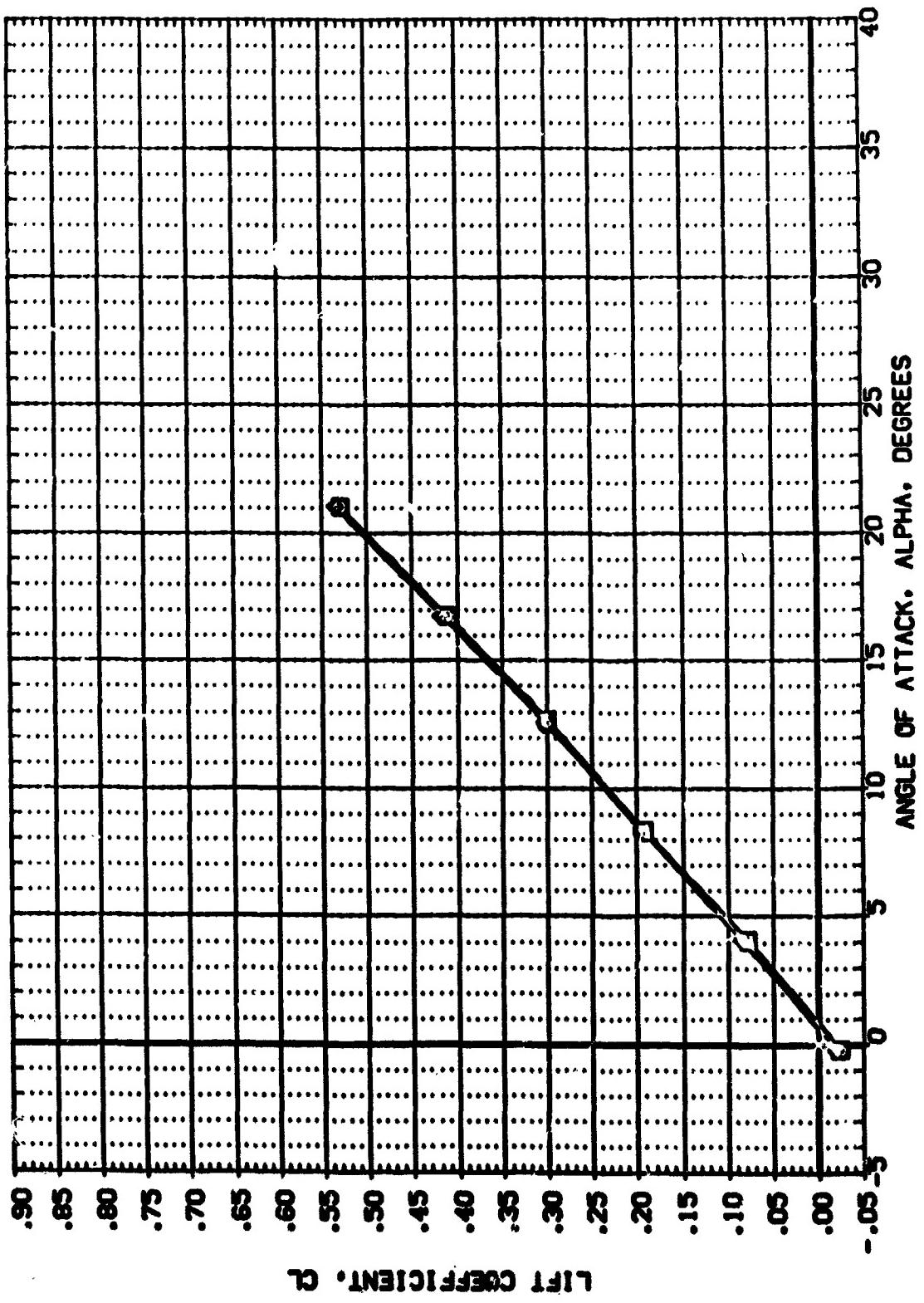
REFERENCE INFORMATION

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SCALE	

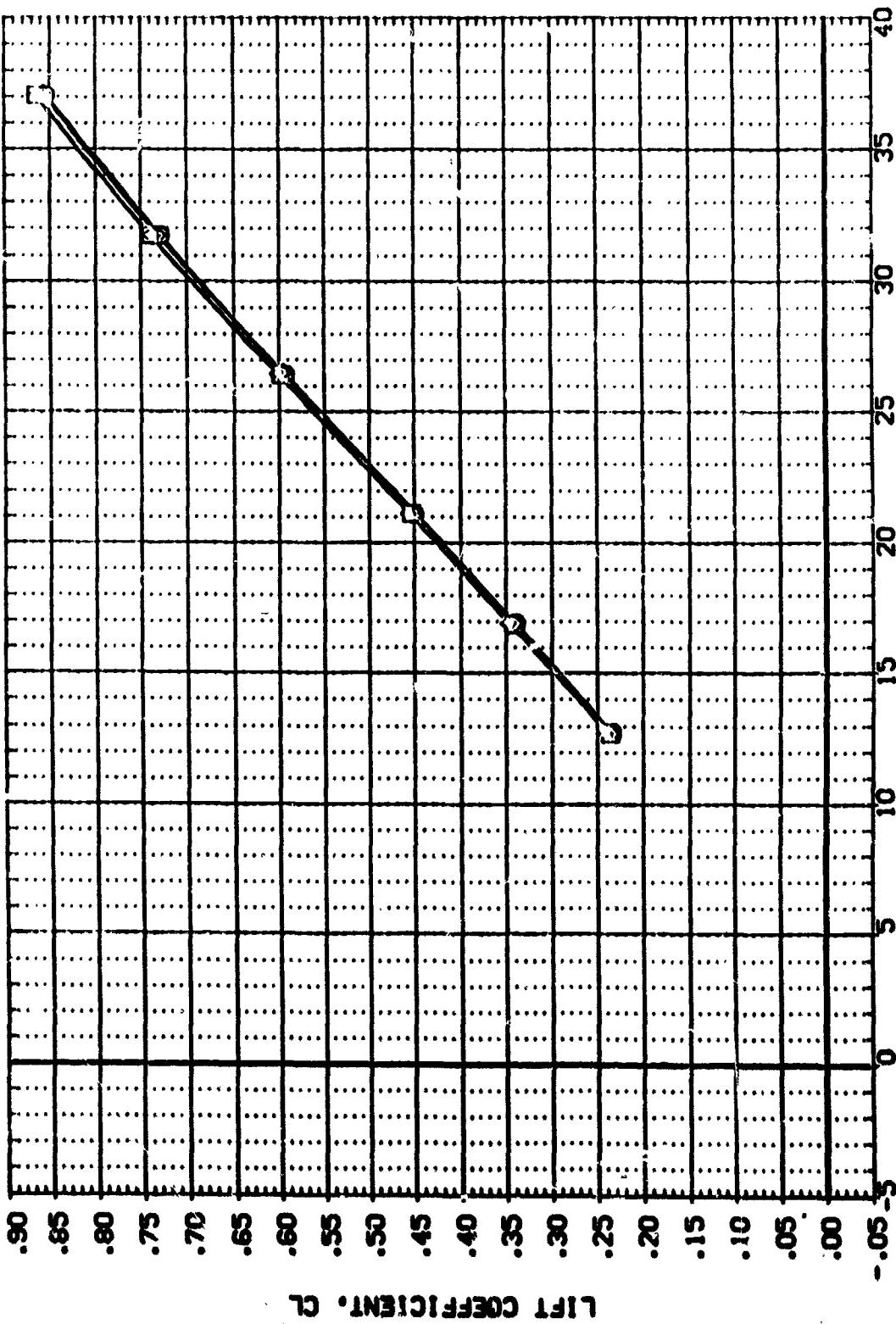


BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
(MACH = 2.50)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA, DEGREES	P0-JET, INCHES	RNL, INCHES	REFERENCE INFORMATION
(B7016)	MA-7, UPN 1031, ROCKWELL PER CRN/L = 3.000	.000	.000	3.000	REF .7245 SQ. FT. LREF 7.8878 INCHES BREF 15.1152 INCHES XREF 12.5510 INCHES YREF 6.0000 INCHES SCALE .0150
(B7023)	MA-7, UPN 1031, ROCKWELL PER CRN/L = 3.000	.000	.000	3.000	
(B7025)	MA-7, UPN 1031, ROCKWELL PER CRN/L = 3.000	.000	.000	3.000	
(B7026)	MA-7, UPN 1031, ROCKWELL PER CRN/L = 3.000	.000	.000	3.000	

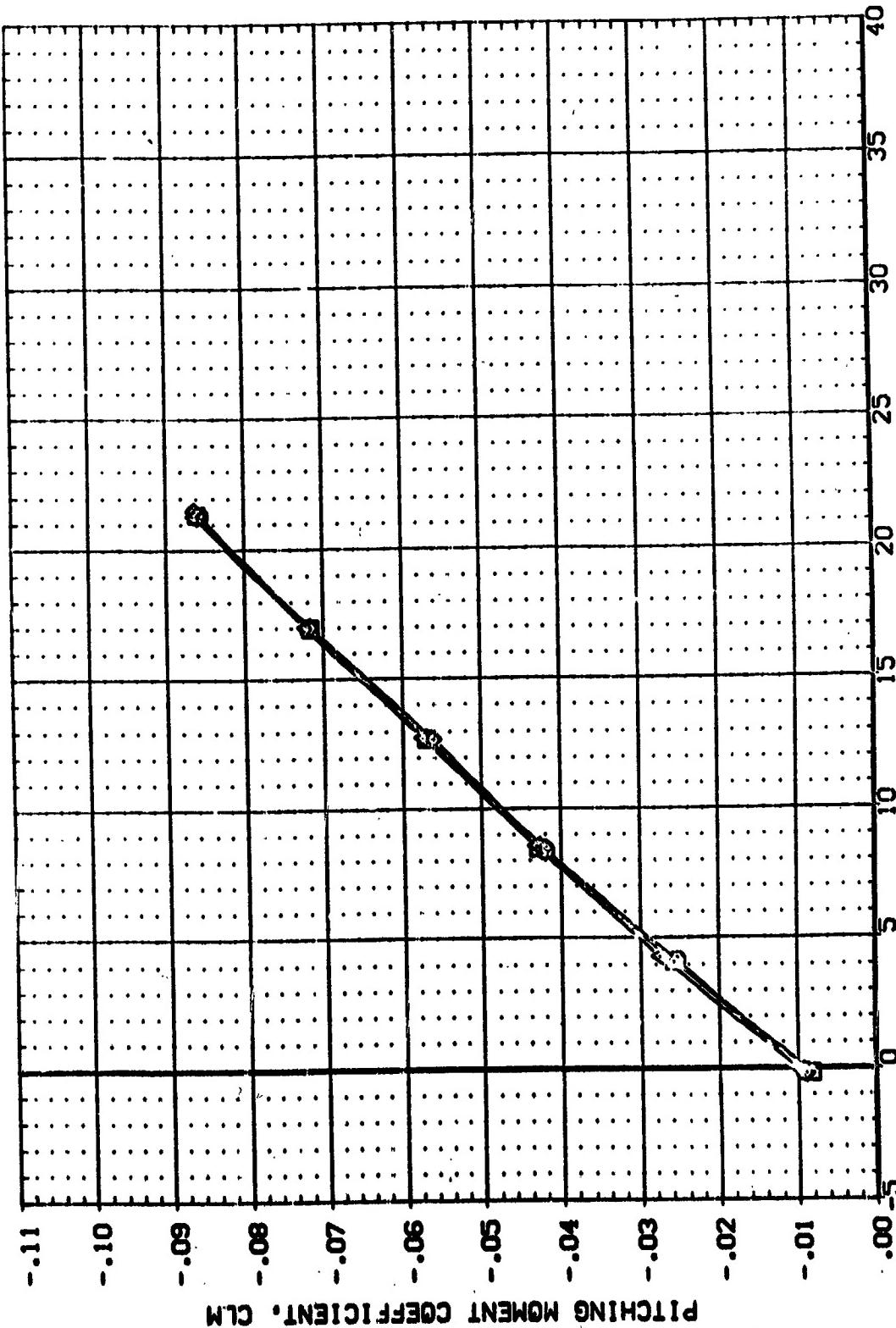


DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (BPH015) O MA-7.1PNT 1031. RECORVELL PRR CRN. CONF.: BMTN1  
 (BPH035) □ MA-7.1PNT 1031. RECORVELL PRR CRN. CONF.: BMTN4  
 (BPH051) X MA-7.1PNT 1031. RECORVELL PRR CRN. CONF.: BMTN6  
 (BPH057) X MA-7.1PNT 1031. RECORVELL PRR CRN. CONF.: BMTN4

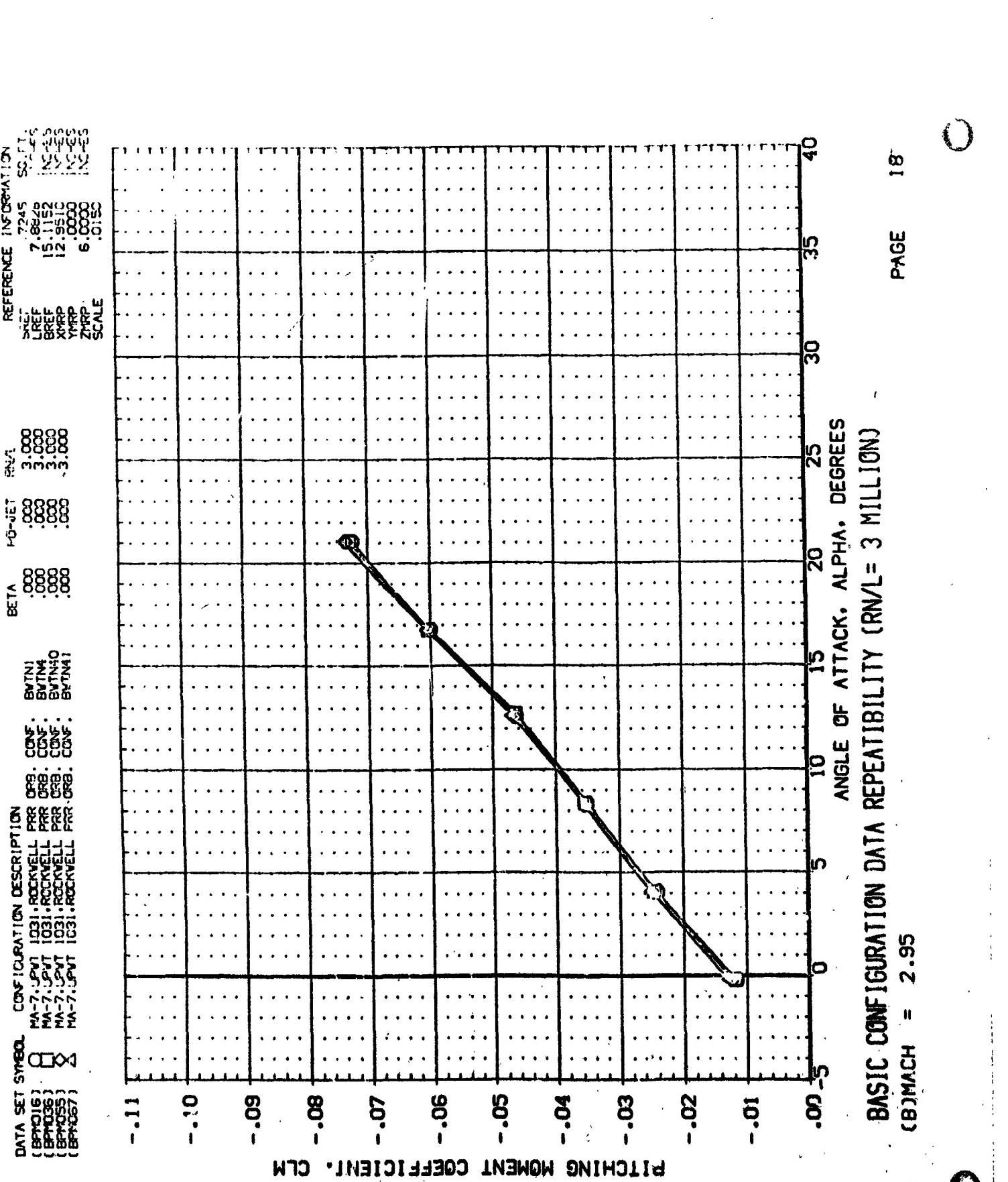


BASIC CONFIGURATION DATA REPEATABILITY (CRN/L = 3 MILLION)  
 (C)MACH = 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	P0-JET	RNL	REFERENCE INFORMATION
(BPT016)	MA-7, UPN 1031, ROCKWELL PRR C95; C96;	.000	.000	3.000	SREF .7215 SD.51
(BPT025)	MA-7, UPN 1031, ROCKWELL PRR C93;	.000	.000	3.000	LREF 7.8828 INCHES
(BPT035)	MA-7, UPN 1031, ROCKWELL PRR C93;	.000	.000	3.000	BREF 15.1152 INCHES
(BPT055)	MA-7, UPN 1031, ROCKWELL PRR C93;	.000	.000	3.000	XREF 12.9510 INCHES
(BPT067)	MA-7, UPN 1031, ROCKWELL PRR C93;	.000	.000	3.000	YREF 6.0000 INCHES
					ZREF .0150 SCALE



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
 $C_{A M A C H} = 2.50$

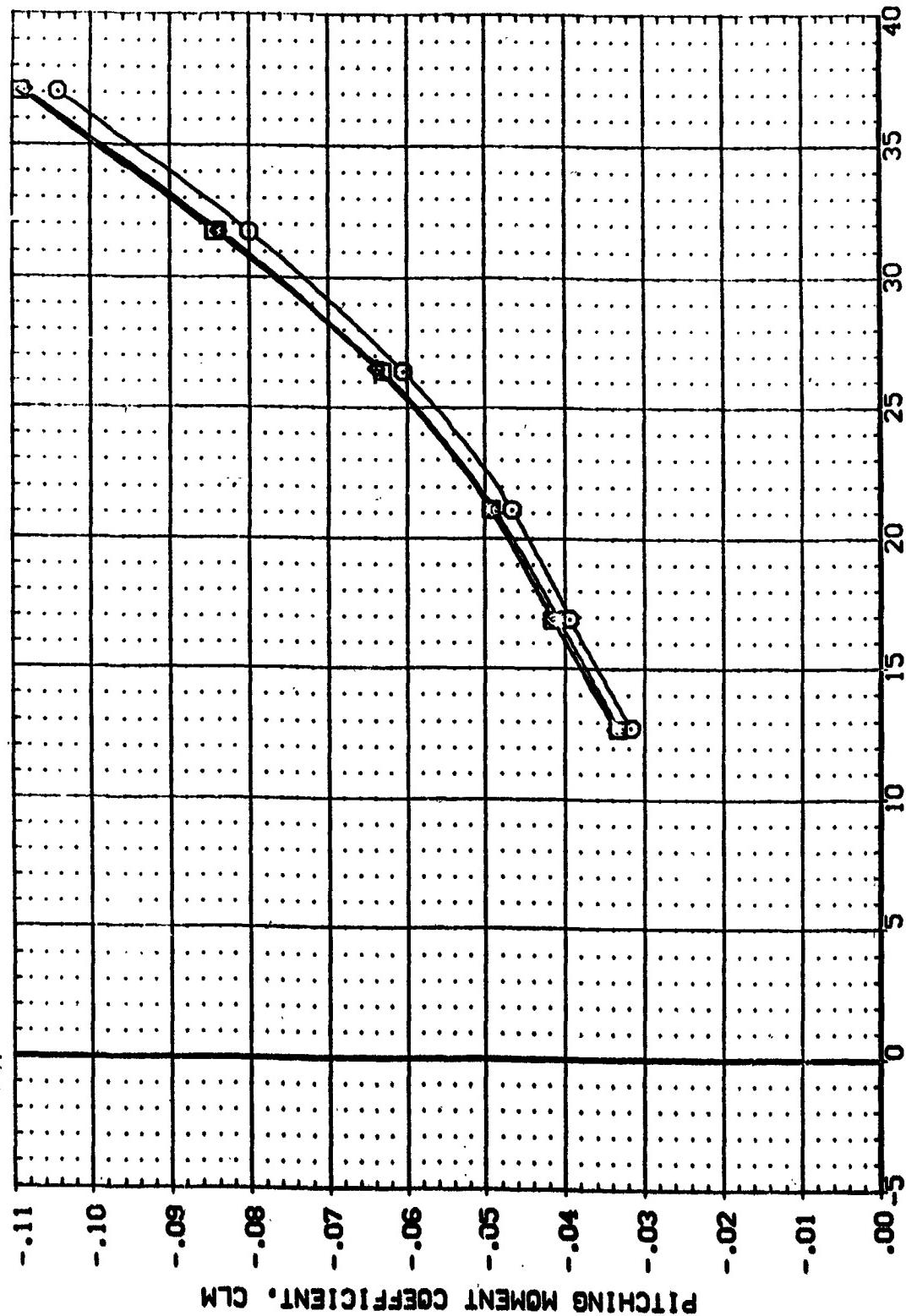


BASIC CONFIGURATION DATA REPEATABILITY (R<sub>N/L</sub>= 3 MILLION)

$$(\text{BOMACH}) = 2.95$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (BPM016)  MA-7, UPN 1031, ROCKWELL PRR CONF.  
 (BPM036)  MA-7, UPN 1031, ROCKWELL PRR CONF.  
 (BPM105)  MA-7, UPN 1031, ROCKWELL PRR CONF.  
 (BPM057)  MA-7, UPN 1031, ROCKWELL PRR CONF.

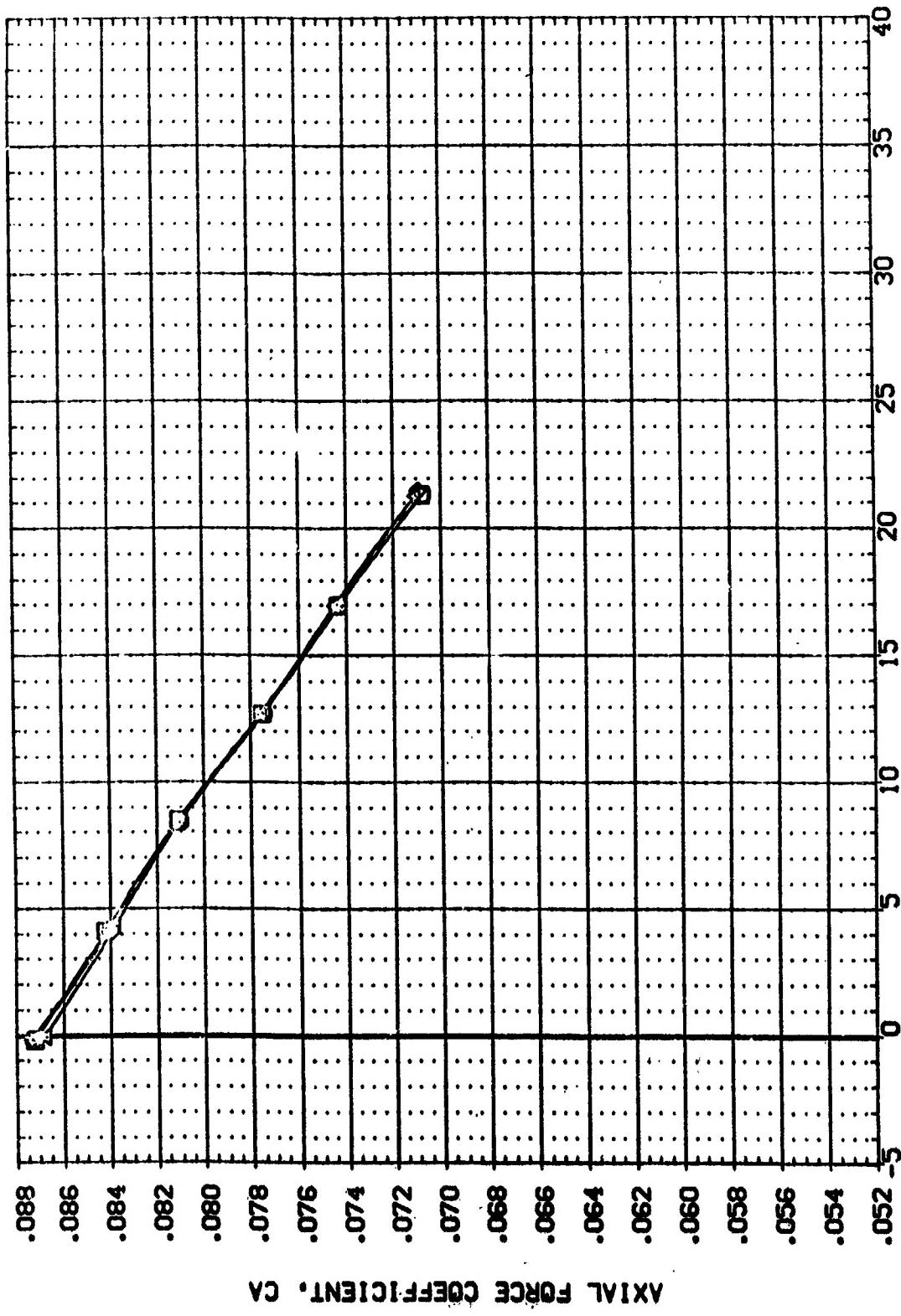
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BREF	15.1152
XRP	12.9510
YRP	.0000
ZRP	.0150
SCALE	



BASIC CONFIGURATION DATA REPEATABILITY (CRN/L = 3 MILLION)  
 ((C)MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (BPM015) MA-7, UPNT 1031, ROCKWELL PRR CR3, CCF, BYTN4  
 (BPM036) MA-7, UPNT 1031, ROCKWELL PRR CR3, CCF, BYTN4  
 (BPM055) MA-7, UPNT 1031, ROCKWELL PRR CR3, CCF, BYTN4  
 (BPM057) MA-7, UPNT 1031, ROCKWELL PRR CR3, CCF, BYTN4

REFERENCE INFORMATION  
 SREF .7245 10.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
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 YREF .0000 INCHES  
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 SCALE .0150

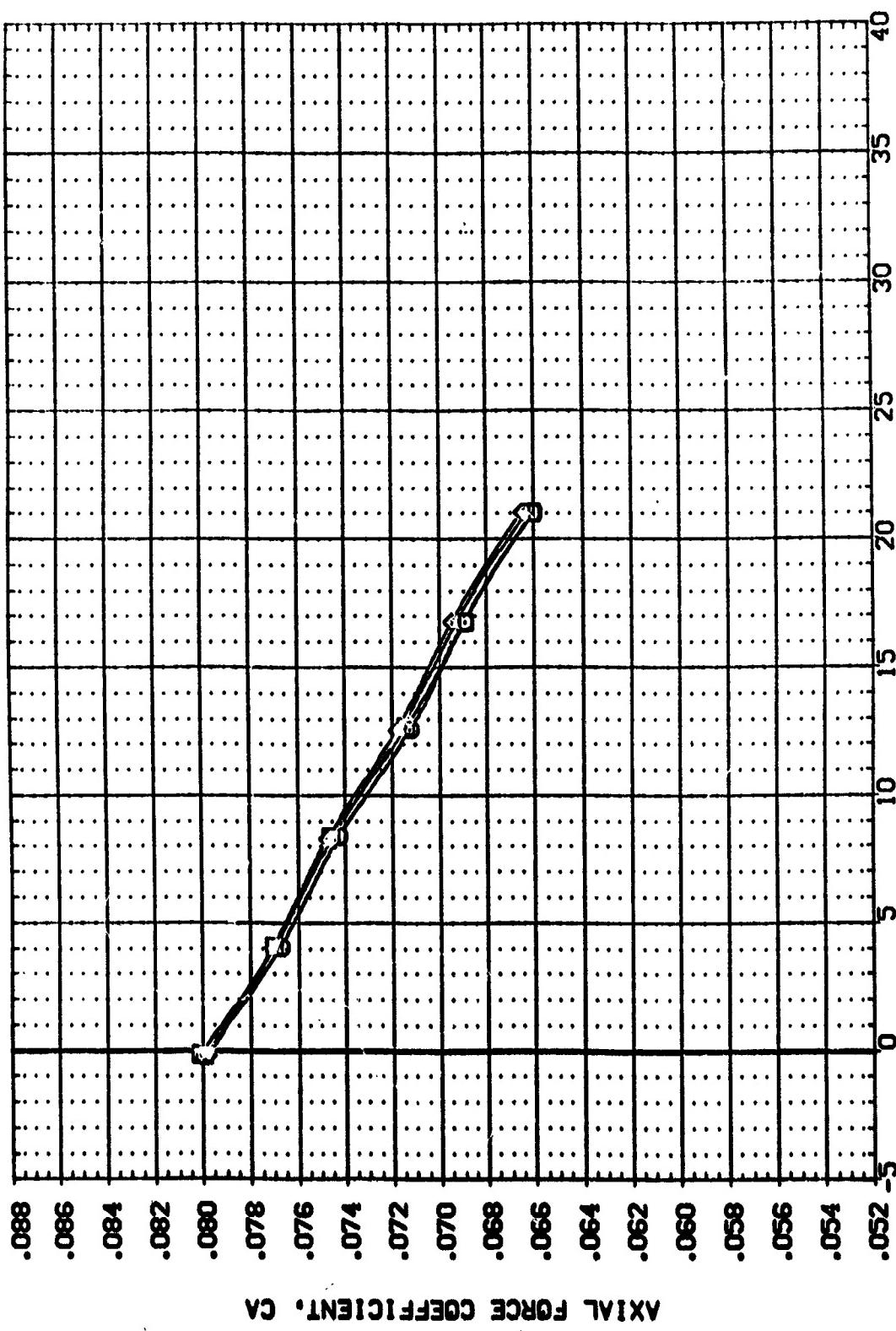


BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
 (AJMACH = 2.50)

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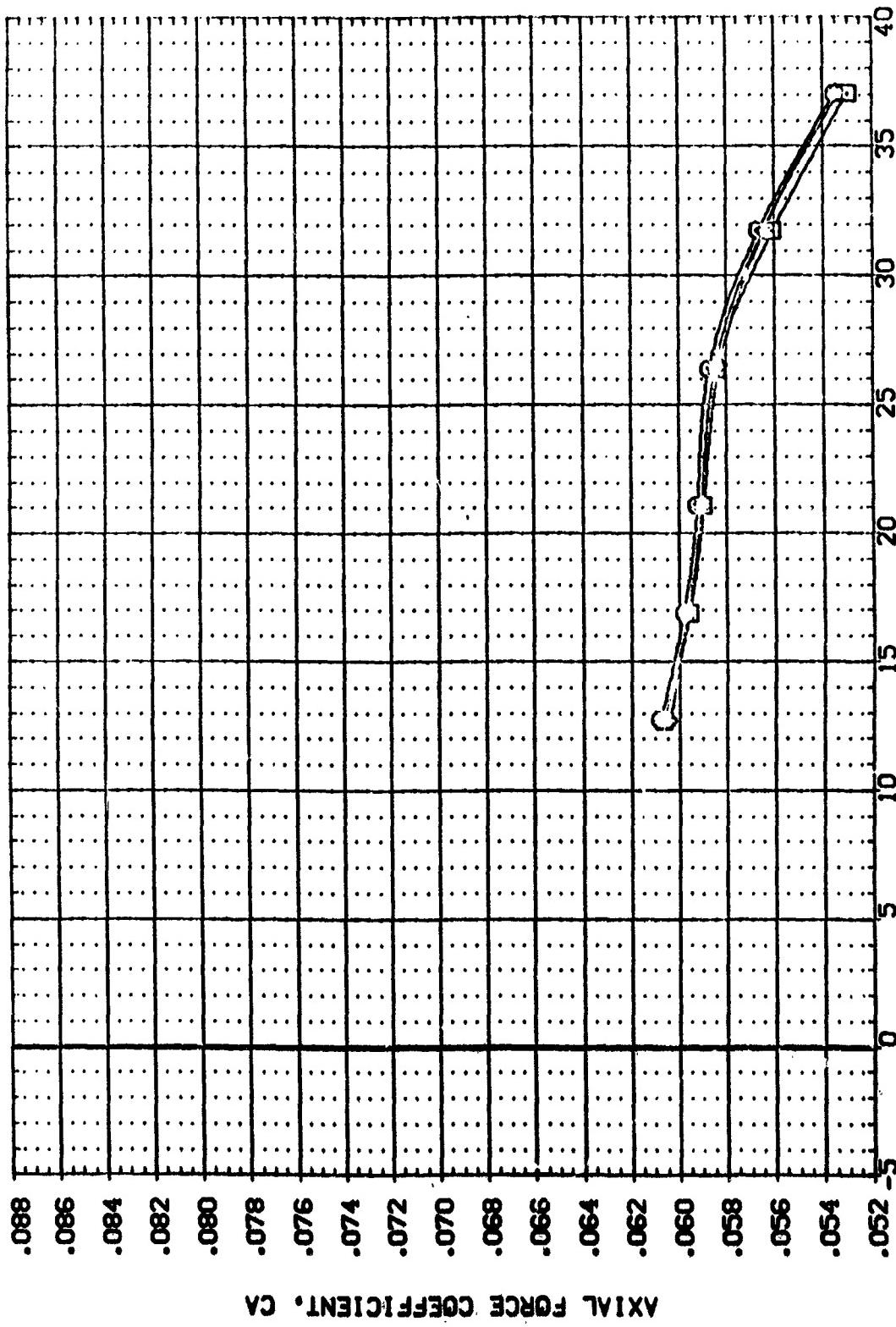
DATA SET SUMMARY

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(BPM026)	MA-7, UPNT	1031, PCKMELL	PRR	.000	.000	LREF 7.8828 INCHES
(BPM035)	MA-7, UPNT	1031, PCKMELL	PRR	.000	.000	BREF 15.1152 INCHES
(BPM055)	MA-7, UPNT	1031, PCKMELL	PRR	.000	.000	XMRP 12.9510 INCHES
(BPM067)	MA-7, UPNT	1031, PCKMELL	PRR	.000	.000	YMRP 6.0000 INCHES
						ZMRP .0150 SCALE



BASIC CONFIGURATION DATA REPEATIBILITY (RN/L = 3 MILLION)  
 $(B)_MACH = 2.95$

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RNL	REFERENCE INFORMATION
(B7016)	MA-7, UPN 1031, ROCKWELL PRR, CONF. BVTN1	.000 .000 3.000	SREF 7245 SC. FT.
(B7036)	MA-7, UPN 1031, ROCKWELL PRR, CONF. BVTN4	.000 .000 3.000	LREF 7.8228 INCHES
(B7055)	MA-7, UPN 1031, ROCKWELL PRR, CONF. BVTN40	.000 .000 3.000	BREF 15.1152 INCHES
(B7067)	MA-7, UPN 1031, ROCKWELL PRR, CONF. BVTN41	.000 .000	XREF 12.6510 INCHES
			YREF .0230 INCHES
			ZREF 6.0000 INCHES
			SCALE .0.125



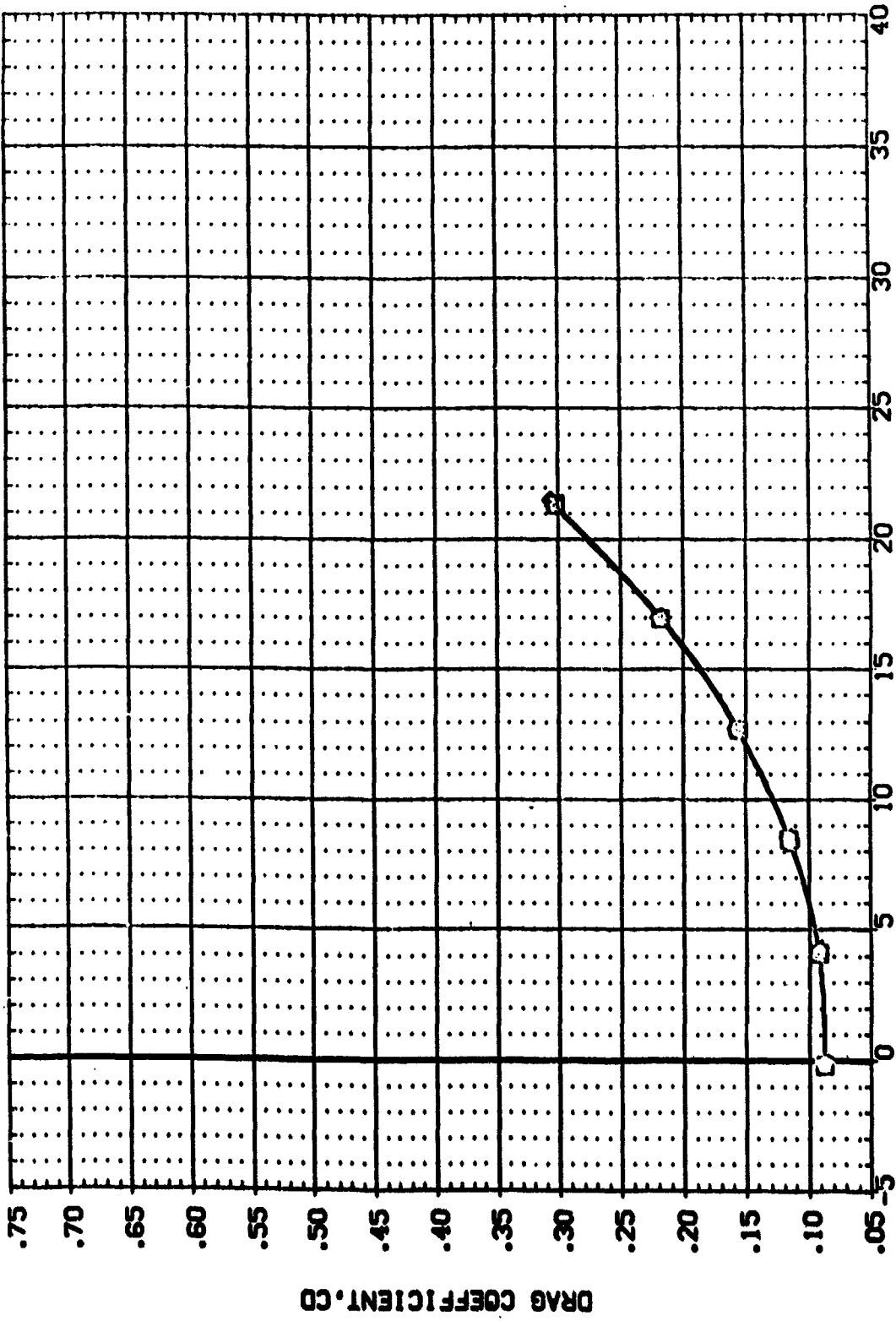
W5C CONFIGURATION DATA REPEATABILITY (RN/L= 3 MILLION)  
 CCWACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(BPM016)	□	MA-7. UPN 1031. ROCKWELL PRR G3. CONF: BVTN1
(BPM036)	○	MA-7. UPN 1031. ROCKWELL PRR G3. CONF: BVTN4
(BPM055)	△	MA-7. UPN 1031. ROCKWELL PRR G3. CONF: BVTN40
(BPM067)	×	MA-7. UPN 1031. ROCKWELL PRR G3. CONF: BVTN41

REFERENCE INFORMATION

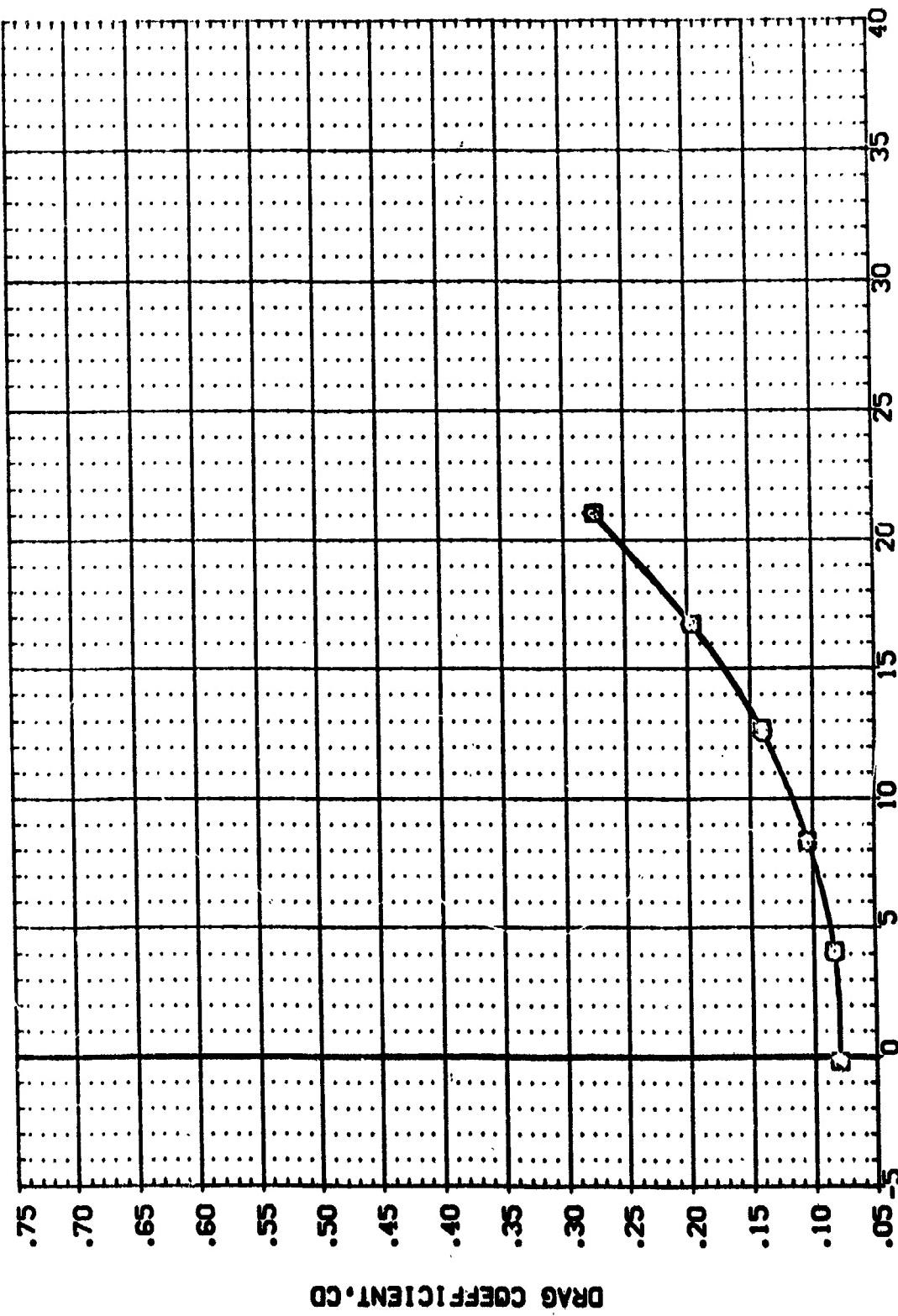
SPEF	.7245	SO. FT.
LEEF	7.8828	INCHES
BCEF	15.1152	INCHES
XCFD	12.9510	INCHES
YCFD	.0000	INCHES
ZCFD	6.0000	INCHES
SCALE	.0150	



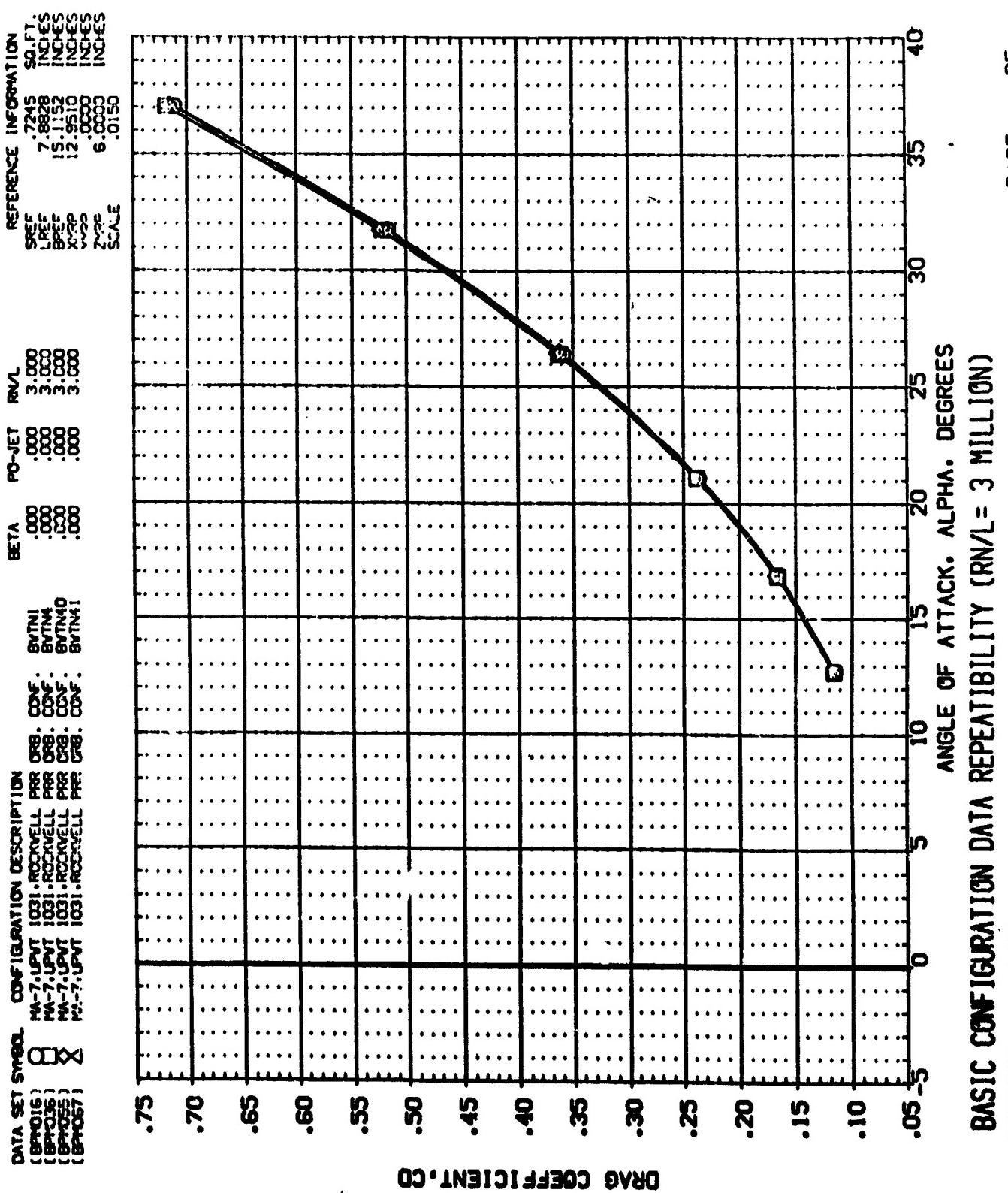
BASIC CONFIGURATION DATA REPEATIBILITY (RN/L = 3 MILLION)  
 MACH = 2.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETAN1	PO-JET	RNL
(BPT016)	MA-7-1,2PT	.000	.000	3.000
(BPT036)	MA-7-1,2PT	.000	.000	3.000
(BPT055)	MA-7-1,2PT	.000	.000	3.000
(BPT057)	MA-7-1,2PT	.000	.000	3.000

SREF  
LREF  
BREF  
XMRP  
YMRP  
ZMRP  
SCALE



BASIC CONFIGURATION DATA REPEATABILITY (RNL = 3 MILLION)  
 CRITICAL MACH = 2.95

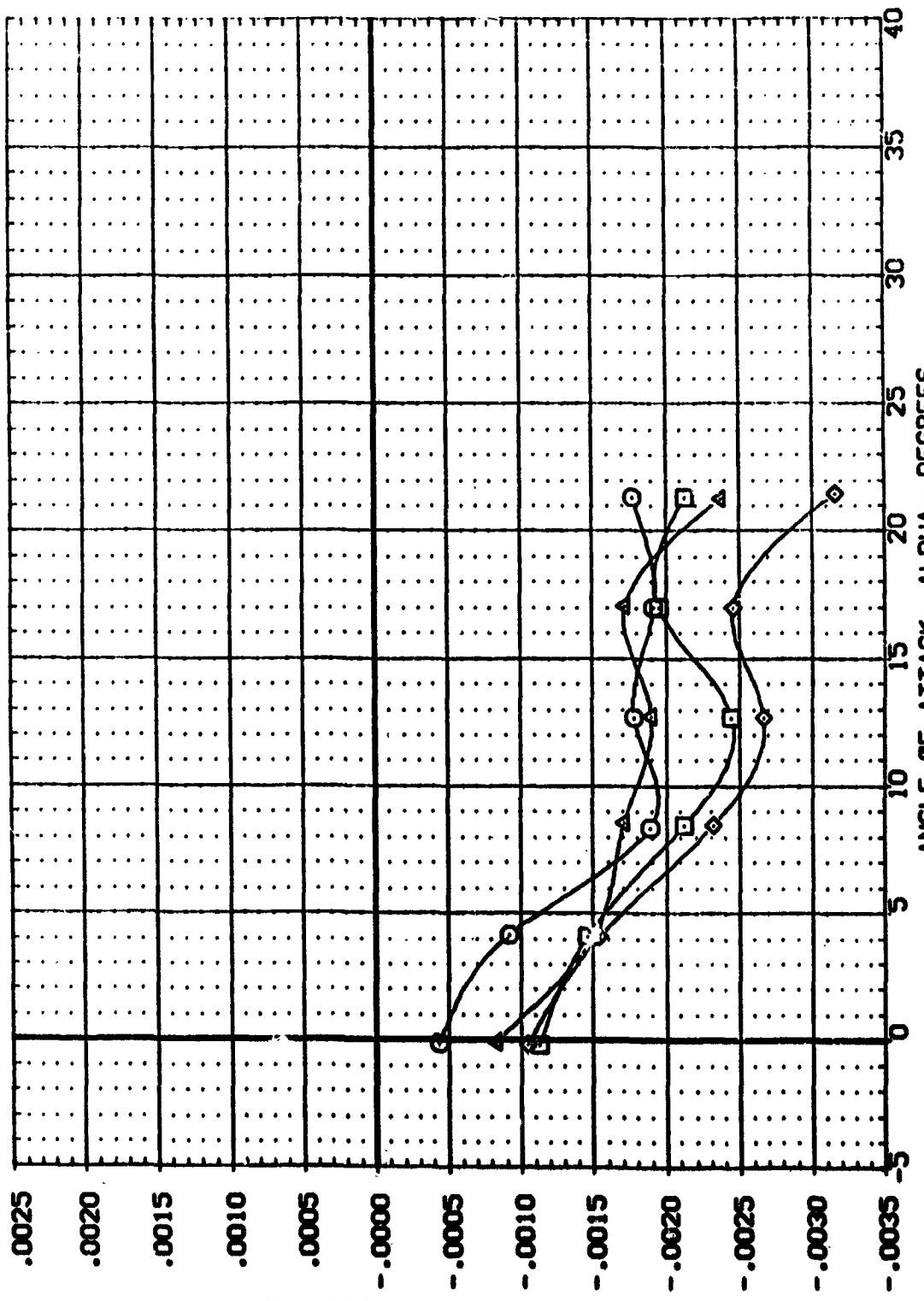


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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (B70016) MA-7, UPN 1031, RECOMMEND, PBR, GRB, CONF.  
 (B70035) MA-7, UPN 1031, RECOMMEND, PBR, GRB, CONF.  
 (B70037) MA-7, UPN 1031, RECOMMEND, PBR, GRB, CONF.  
 (B70038) MA-7, UPN 1031, RECOMMEND, PBR, GRB, CONF.

REFERENCE INFORMATION  
 SREF .7245  
 LREF 7.8828  
 BREF 15.1152  
 XHPP 12.9510  
 YHPP 6.0000  
 ZHPP .9550  
 SCALE .0310.

SIDE FORCE COEFFICIENT, CY



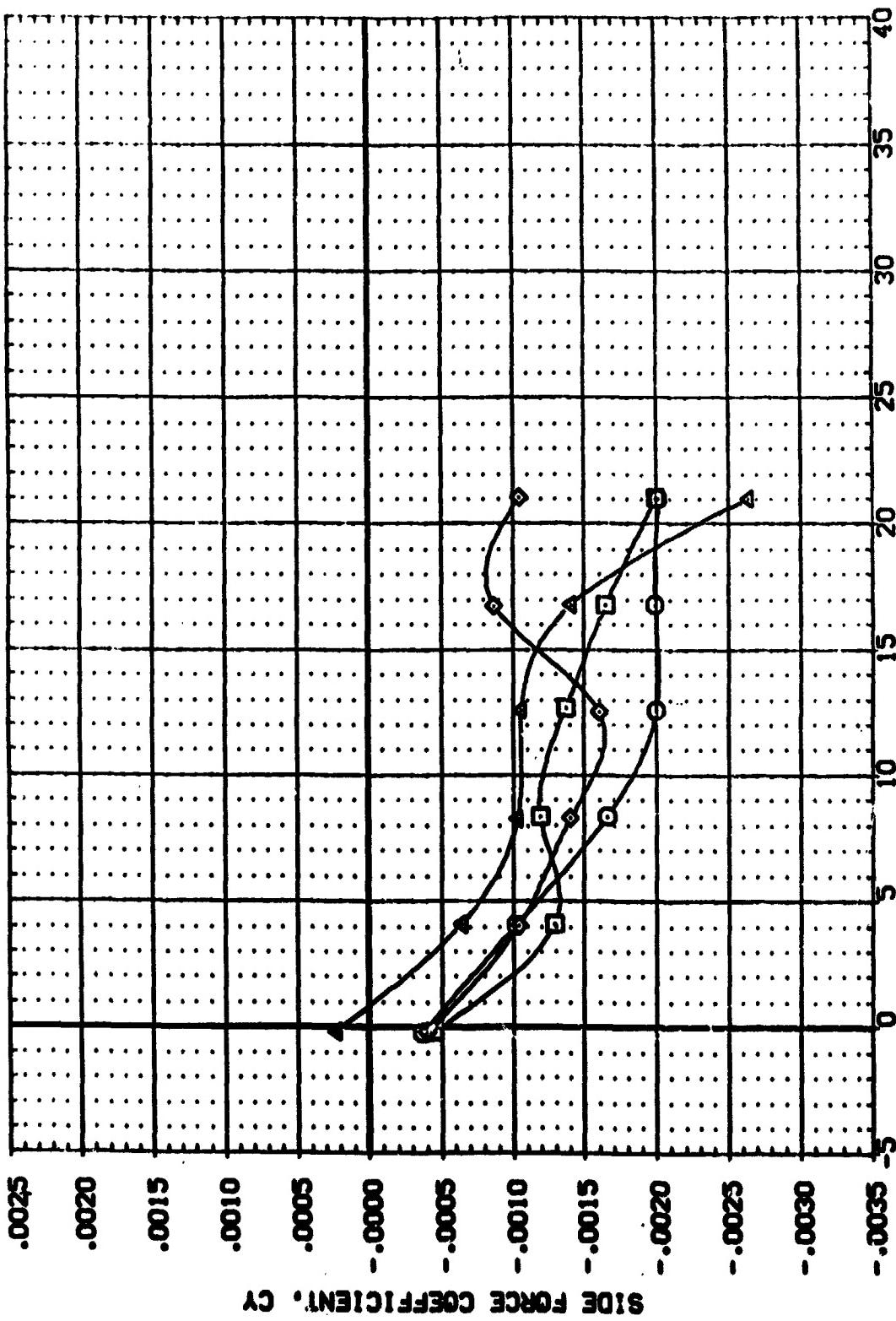
BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
 MACH = 2.50

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DATA SET	SYMOL	CONFIGURATION DESCRIPTION
BPOG16	(D)	3x7-SPST 100V REEDREL PER CIR
BPOG15	(D)	3x7-SPDT 100V REEDREL PER CIR
BPOG14	(D)	3x7-SPDT 100V REEDREL PER CIR
BPOG13	(D)	3x7-SPDT 100V REEDREL PER CIR
BPOG12	(D)	3x7-SPDT 100V REEDREL PER CIR
BPOG11	(D)	3x7-SPDT 100V REEDREL PER CIR
BPOG10	(D)	3x7-SPDT 100V REEDREL PER CIR

REFERENCE INFORMATION		12 FT. INCHES	12 INCHES	12 INCHES	12 INCHES
SREF	.7245	7.8823	15.52	12.86	6.0750
LREF					
BREF					
XREF					
YREF					
ZREF					
SCALE					

REFERENCE	INFORMATION
SREF	7245
LREF	7-8823
GREF	5-152
XREF	12-851
YREF	11-111
ZREF	11-111

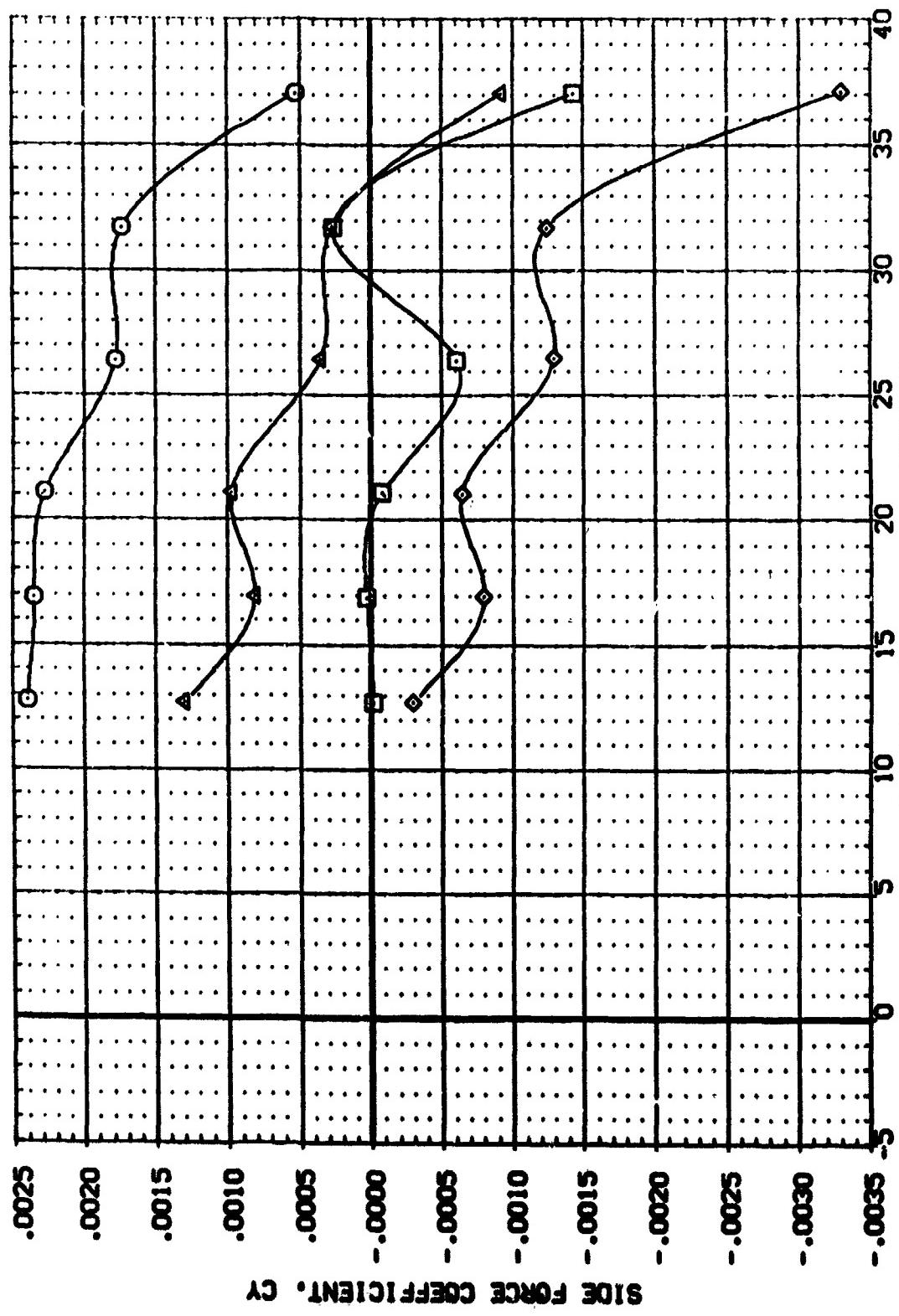


## **BASIC CONVERSATION DATA REPEATABILITY (P/N) = 3 MIL 10N**

BASIC COUNT [GUKAI]  
C(MATCH) = 2.95

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (BP1016) MA-7, UPNT 1031, ROGUELL PRR CDF. CDF.  
 (BP1035) MA-7, UPNT 1031, ROGUELL PRR CDF. CDF.  
 (BP1036) MA-7, UPNT 1031, ROGUELL PRR CDF. CDF.  
 (BP1057) MA-7, UPNT 1031, ROGUELL PRR CDF. CDF.

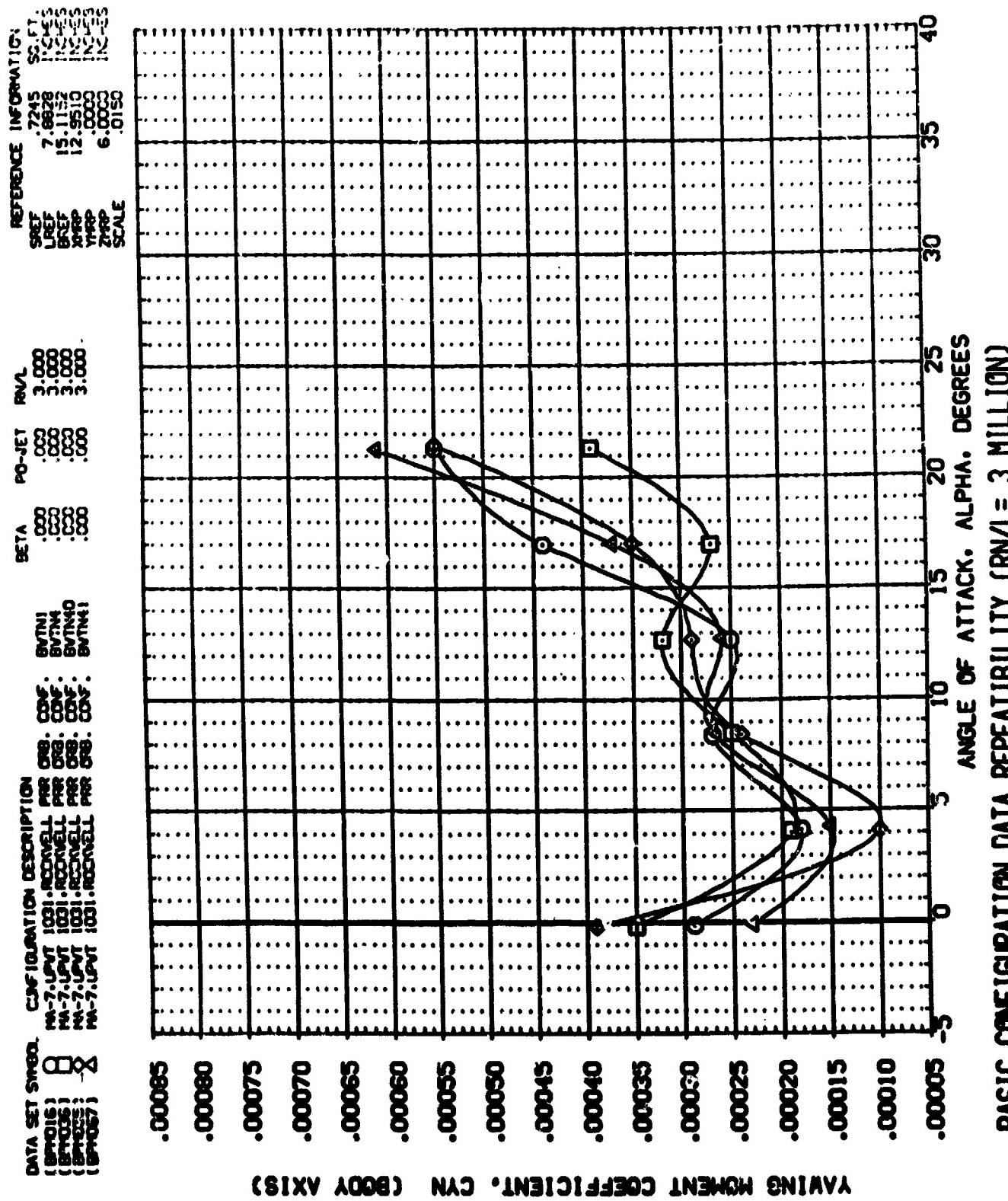
REFERENCE INFORMATION  
 SREF .7245 SC FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0150 INCHES  
 SCALE



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
 APPROX = 4.00

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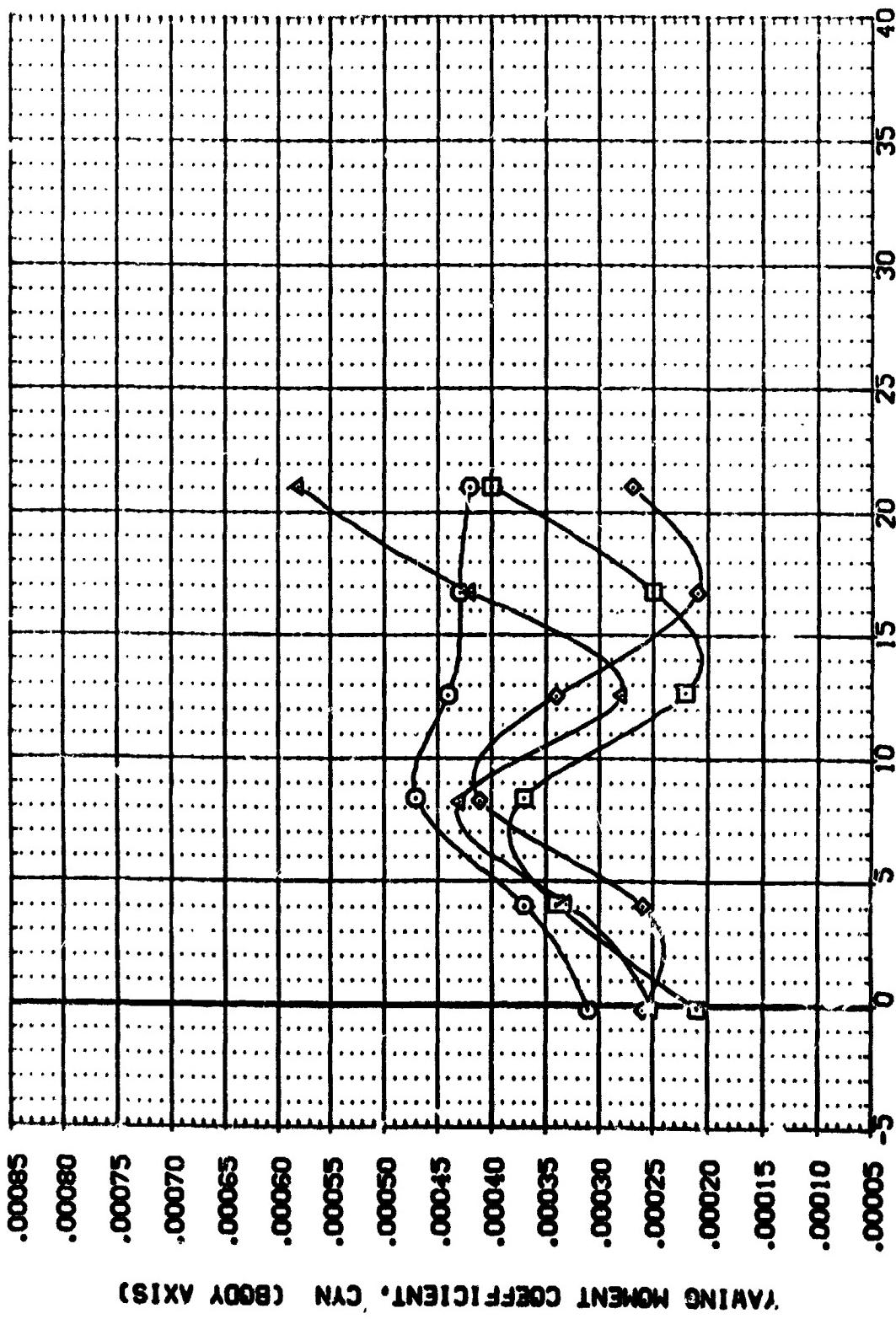
**BASIC CONFIGURATION**



DATA SET SIZES

(B7016)	MA-7-JET	1031. REYNELL PAR	008. COF.	B7N1
(B7036)	MA-7-JET	1031. REYNELL PAR	008. COF.	B7N2
(B7037)	MA-7-JET	1031. REYNELL PAR	008. COF.	B7N3
(B7038)	MA-7-JET	1031. REYNELL PAR	008. COF.	B7N4

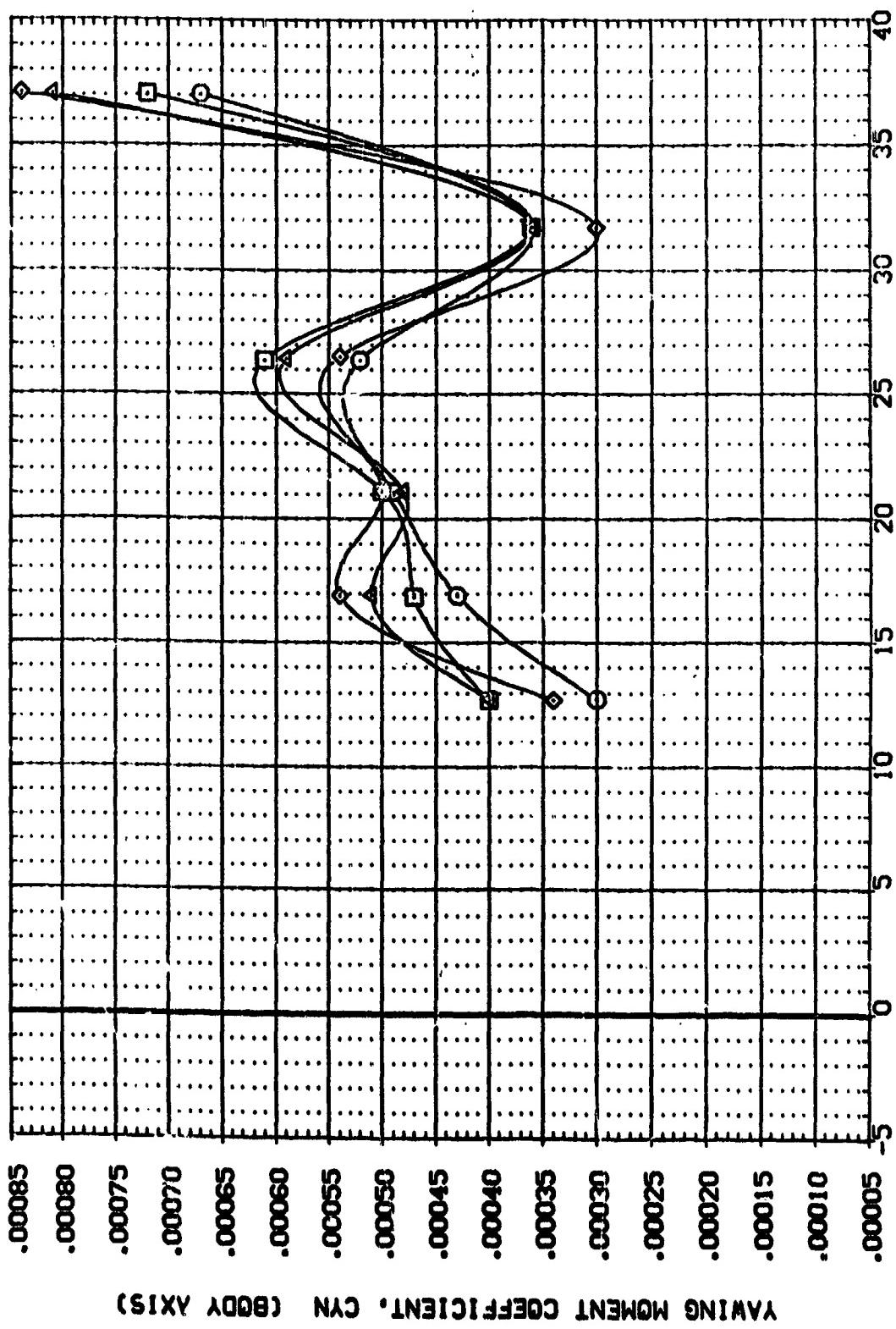
REFERENCE INFORMATION  
 SREF .7245 SC.FT.  
 LREF 7.3272 INCHES  
 BREF 15.152 INCHES  
 XREF 12.650 INCHES  
 YREF 6.3220 INCHES  
 ZREF 6.3220 INCHES  
 SCALE



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
 CRUISE = 2.95

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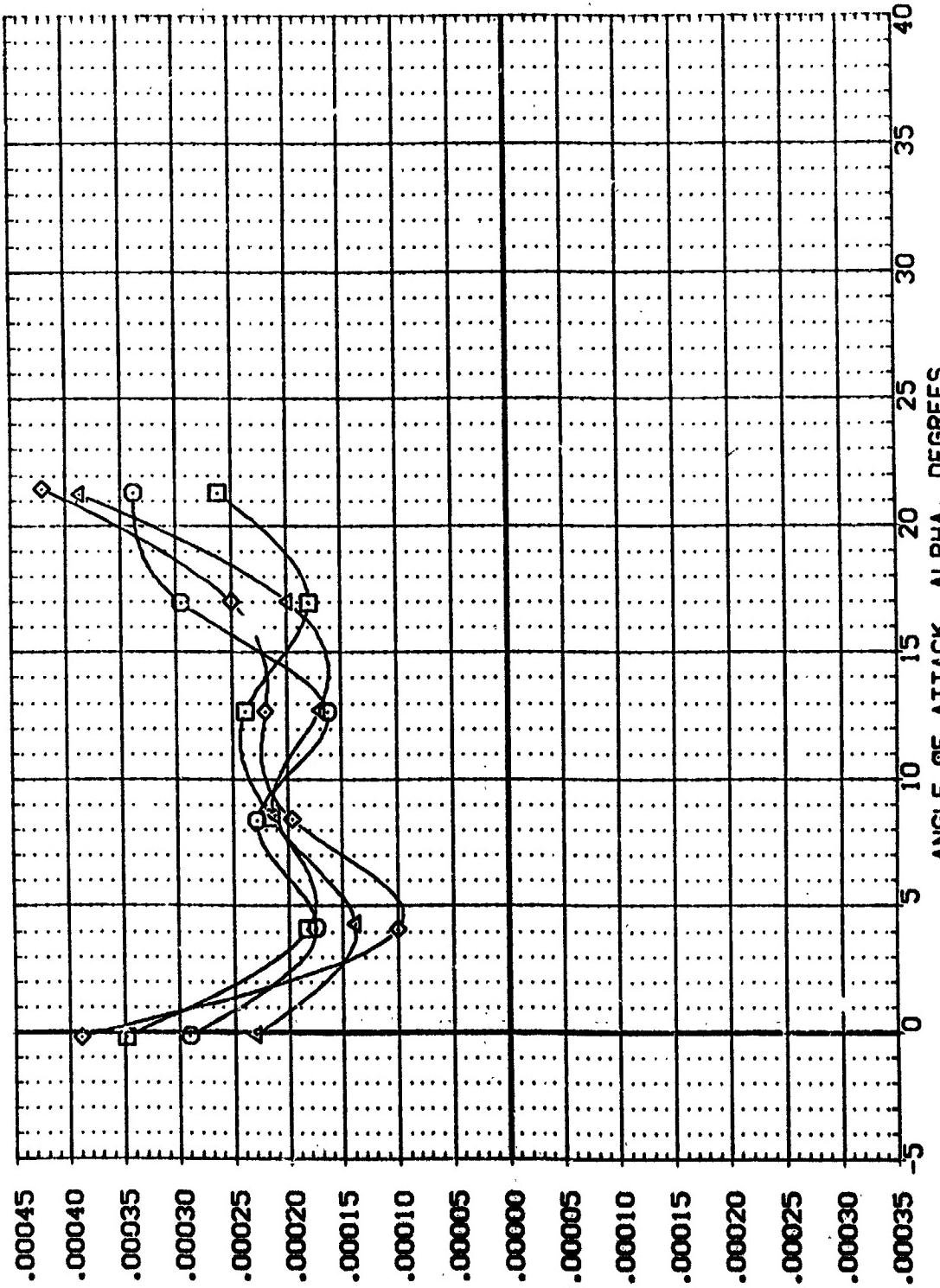
DATA SET SYMBOL		CONFIGURATION DESCRIPTION		REFERENCE INFORMATION	
(B7051)	□	MA-7-UPN	1031-RDG/NELL	P/R	C/G:
(B7052)	□	MA-7-UPN	1031-RDG/NELL	P/R	C/G:
(B7053)	△	MA-7-UPN	1031-RDG/NELL	P/R	C/G:
(B7057)	△	MA-7-UPN	1031-RDG/NELL	P/R	C/G:



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
(C)MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (BPP016) O MA-7. UPVT 1031. ROCKWELL PRR GRB. CONF: BVTN1  
 (BPP036) X MA-7. UPVT 1031. ROCKWELL PRR GRB. CONF: BVTN4  
 (BPP055) □ MA-7. UPVT 1031. ROCKWELL PRR GRB. CONF: E-TN40  
 (BPP087) ▲ MA-7. UPVT 1031. ROCKWELL PRR GRB. CONF: BVTN41

REFERENCE INFORMATION  
 SREF .7245 SC. FT.  
 LREF 1.8828 12.455  
 BREF 15.1152 12.455  
 ATRP 12.9510 12.455  
 YTRP 6.0000 12.455  
 ZTRP .0153 SCALE

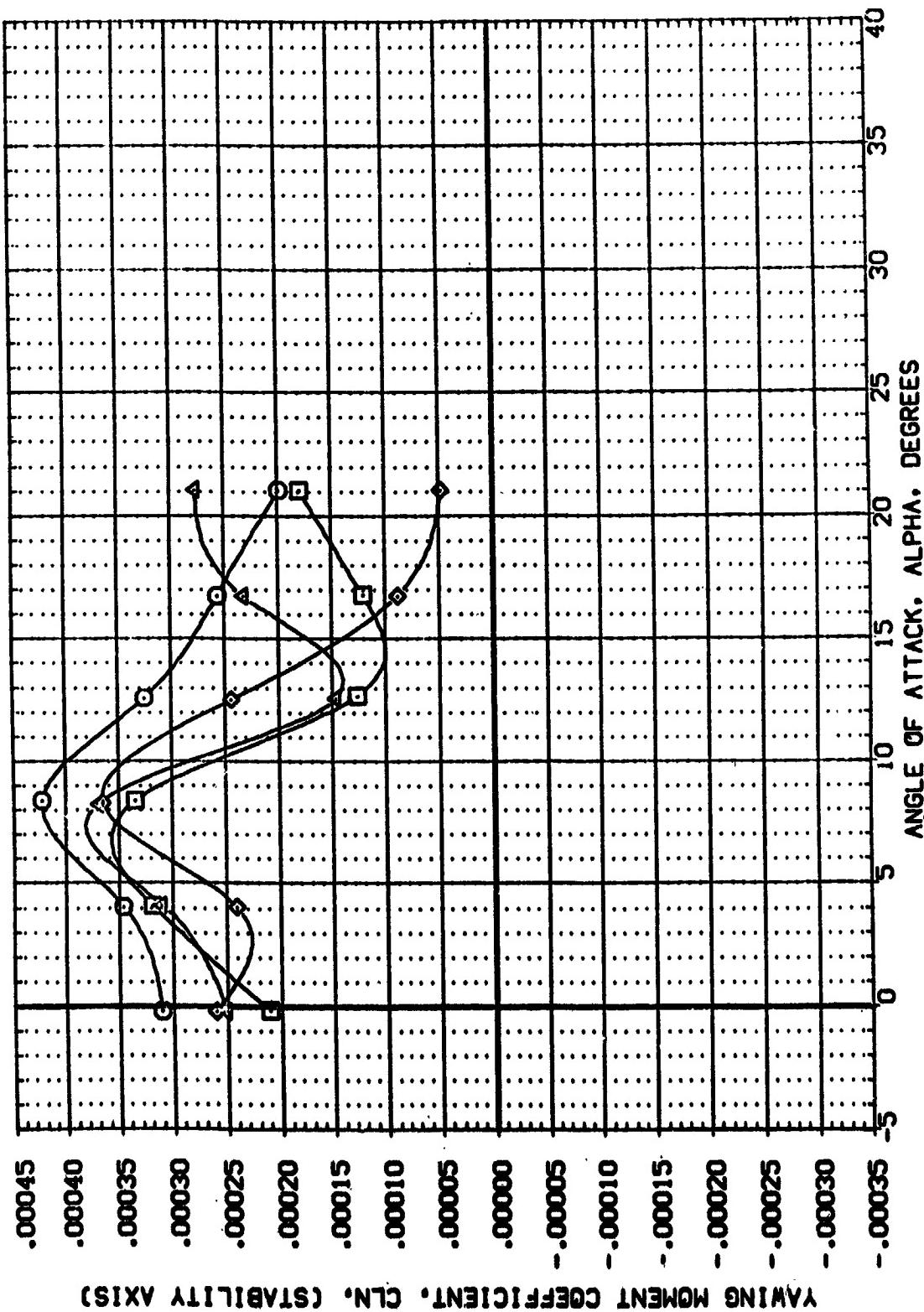


YAWING MOMENT COEFFICIENT. CLn. (STABILITY AXIS)

BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)

CANACH = 2.50

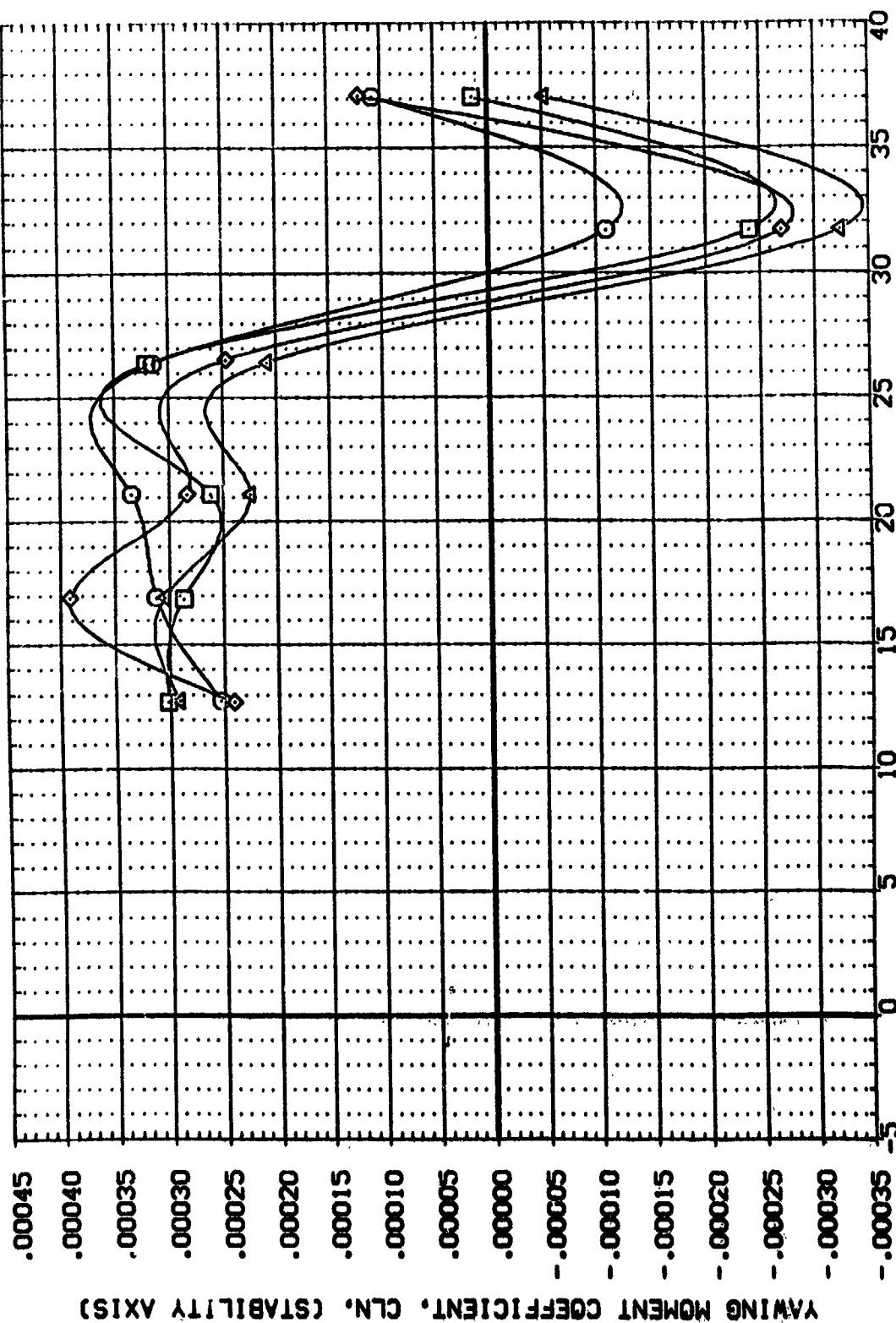
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BET <sub>A</sub>	P0-JET	RN/L	REFERENCE INFORMATION
(BPM016)	MA-7, UPWT 1031, ROCKWELL PRR 558, CONF: BWTN1	.000	.000	3.000	SREF .7245 SQ.FT; LREF 7.6828 INCHES RREF 15.1152 INCHES XREF 12.9510 INCHES YREF 6.0000 INCHES ZREF 6.0000 INCHES SCALE .0150
(BPM035)	MA-7, UPWT 1031, ROCKWELL PRR 558, CONF: BWTN4	.000	.000	3.000	
(BPM055)	MA-7, UPWT 1031, ROCKWELL PRR 558, CONF: BWTN40	.000	.000	3.000	
(BPM067)	MA-7, UPWT 1031, ROCKWELL PRR 558, CONF: BWTN41	.000	.000	3.000	



**BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)**  
(B)<sub>MACH</sub> = 2.95

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PO-JET	RNL
(BPM016)	MA-7, UPVT 1031, ROCKWELL PRR	CONF: BVTN1	.000 .000 .000
(BPM035)	MA-7, UPVT 1031, ROCKWELL PRR	CONF: BVTN4	.000 .000 .000
(BPM055)	MA-7, UPVT 1031, ROCKWELL PRR	CONF: BVTN9	.000 .000 .000
(BPM057)	MA-7, UPVT 1031, ROCKWELL PRR	CONF: BVTN41	.000 .000 .000

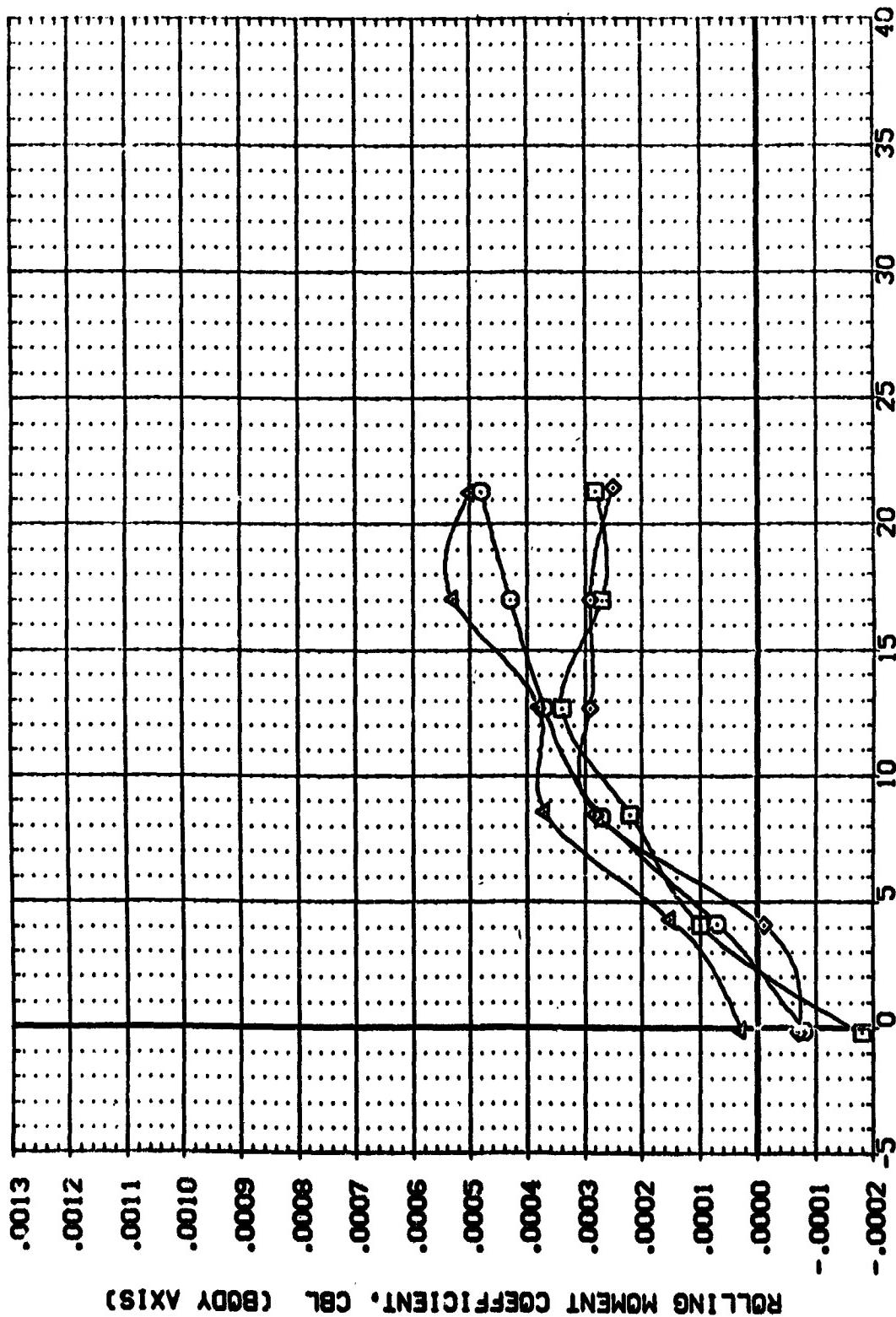
REFERENCE INFORMATION	SC. FT.
SREF	.7245
LREF	7.6873
BREF	15.1152
XRP	12.9510
YRP	.0000
ZRP	6.0000
SCALE	.0150



**BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)**  
 $(C_MACH = 4.00)$

DATA SET SPEED CONFIGURATION DESCRIPTION  
 (SPH016) MA-7, UPNT 1031, ROCKWELL PRR CONF. BVTN1  
 (SPH036) MA-7, UPNT 1031, ROCKWELL PRR CONF. BVTN4  
 (SPH055) MA-7, UPNT 1031, ROCKWELL PRR CONF. BVTN40  
 (SPH067) MA-7, UPNT 1031, ROCKWELL PRR CONF. BVTN41

REFERENCE INFORMATION  
 SREF .725 SQ.FT.  
 LREF 7.8876 INCHES  
 BREF 15.1152 INCHES  
 XRP 12.9510 INCHES  
 YRP 6.0000 INCHES  
 ZRP .0152 INCHES  
 SCALE .0152



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)

TAN(MACH) = 2.50

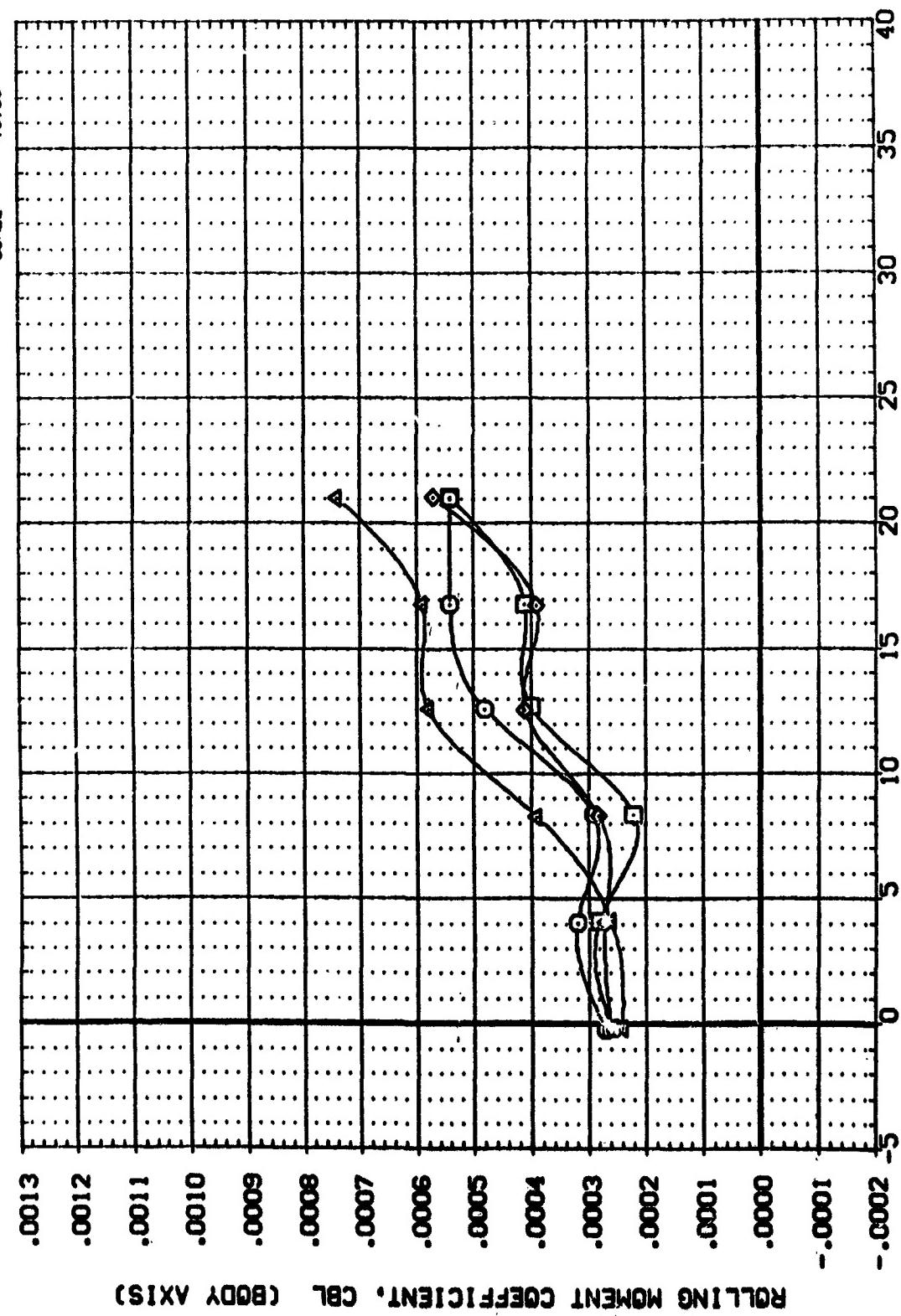
PAGE 35

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(BPN16)	□	MA-7. UPN 1031. ROCKWELL PRR CONF.
(BPN36)	□	MA-7. UPN 1031. ROCKWELL PRR CONF.
(BPN35)	X	MA-7. UPN 1031. ROCKWELL PRR CONF.
(BPN37)	X	MA-7. UPN 1031. ROCKWELL PRR CONF.

REFERENCE INFORMATION

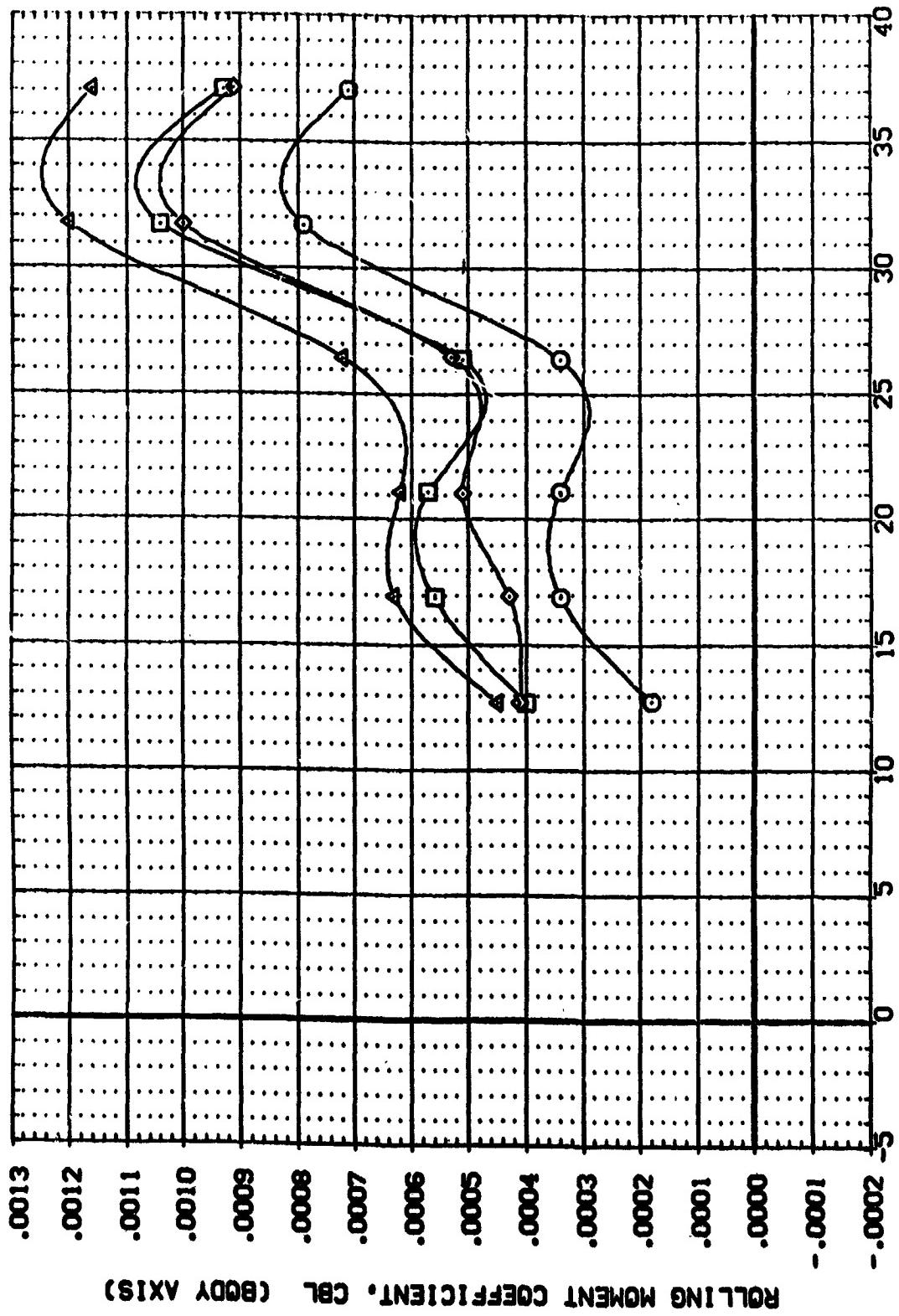
SREF	.7245	SQ.FT
LREF	.78828	INCHES
BREF	15.1132	INCHES
XREF	12.9510	INCHES
YREF	.0000	INCHES
ZREF	.6	INCHES
SCALE	.0150	



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
(B<sub>MACH</sub> = 2.95)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

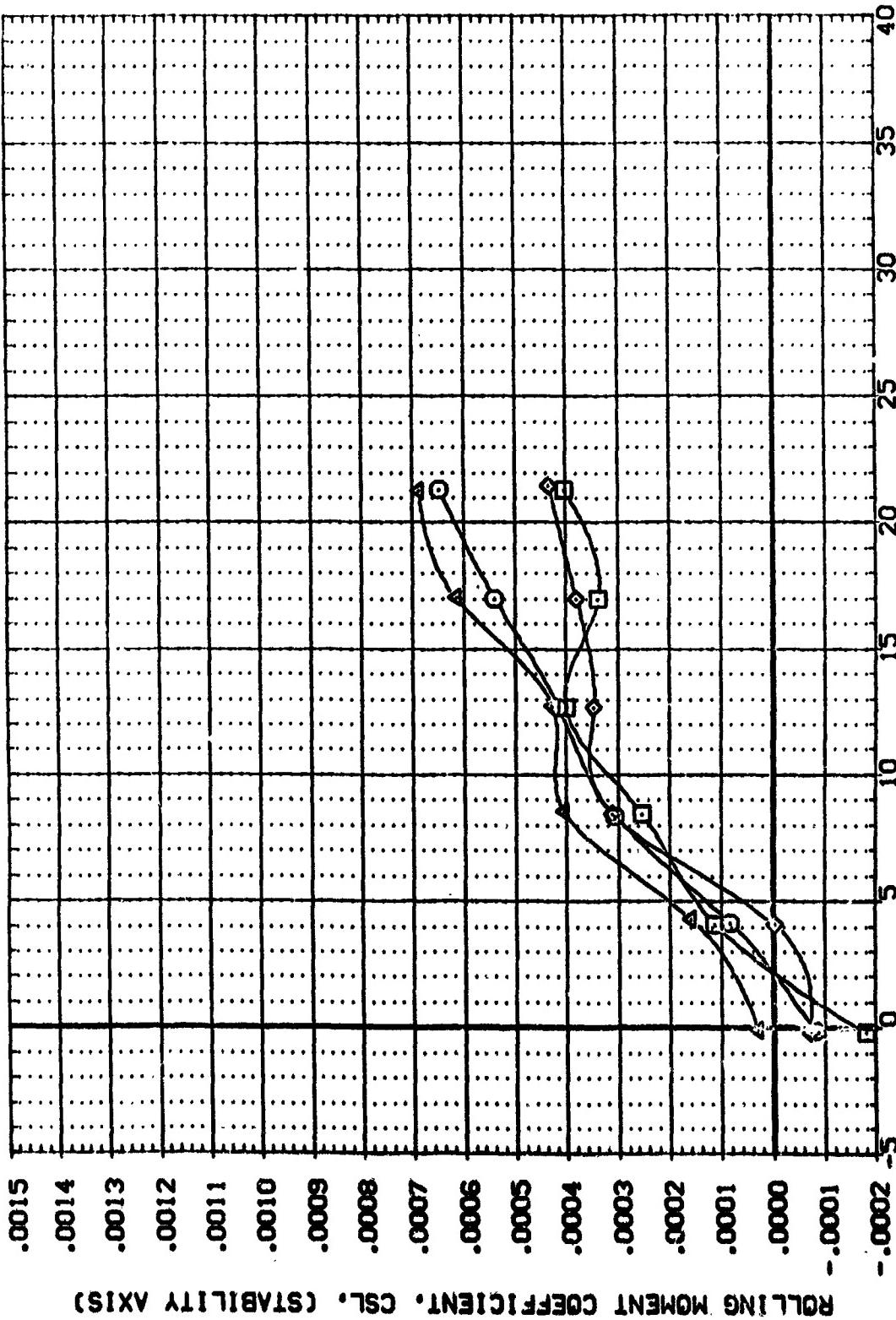
(BPH016)	□	MA-7, UPT, 1031, ROCKWELL, PRR, CONF.
(BPH021)	○	MA-7, UPT, 1031, ROCKWELL, PRR, CONF.
(BPH025)	×	MA-7, UPT, 1031, ROCKWELL, PRR, CONF.
(BPH057)	△	MA-7, UPT, 1031, ROCKWELL, PRR, CONF.



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
(C)MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (B7016) MA-7, UPN 1031, ROCKWELL PRR CRB. CONF.: BVTN1  
 (B7036) MA-7, UPN 1031, ROCKWELL PRR CRB. CONF.: BVTN4  
 (B7025) MA-7, UPN 1031, ROCKWELL PRR CRB. CONF.: BVTN40  
 (B7027) MA-7, UPN 1031, ROCKWELL PRR CRB. CONF.: BVTN1

REFERENCE INFORMATION  
 SPEC .7245 SQ.FT.  
 LREF 7.8928 INCHES  
 EREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF 6.0000 INCHES  
 ZREF .0150  
 SCALE

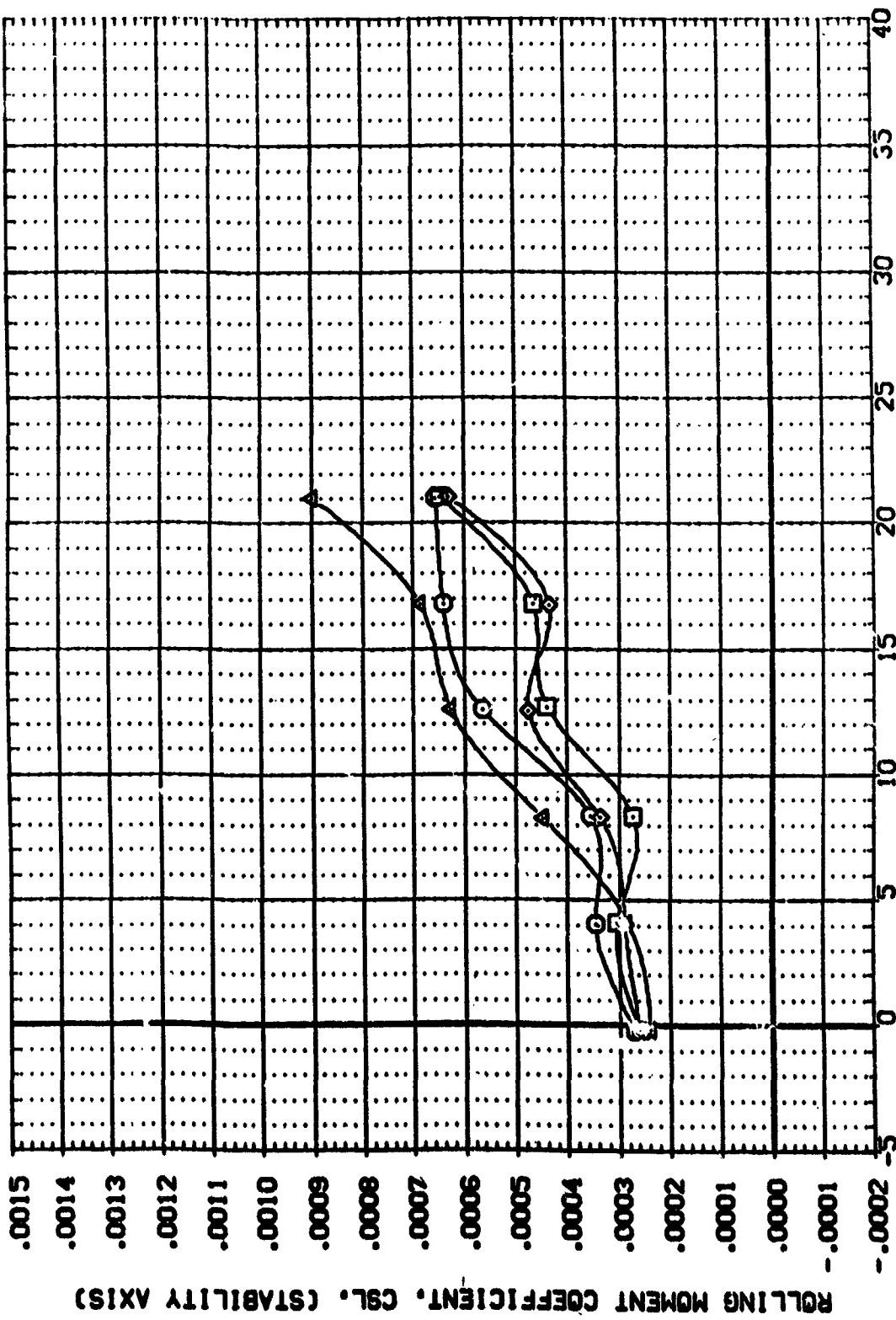


BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
 C<sub>OMMACH</sub> = 2.50

DATA SET STREAM	CONFIGURATION DESCRIPTION
(BP016)	MA-7,1PVT
(BP035)	MA-7,1PVT
(BP055)	MA-7,1PVT
(BP057)	MA-7,1PVT
(BP061)	MA-7,1PVT
(BP065)	MA-7,1PVT
(BP071)	MA-7,1PVT

		REFERENCE INFORMATION		SC. FT.	INCHES	INCHES	INCHES	INCHES	INCHES
BETA	P0-JET	RNL	SREF	.7245	7.8823	15.1152	12.9510	.0000	.0000
.000	.000	3.000	LREF						
.000	.000	3.000	EREF						
.000	.000	3.000	ZREF						
.000	.000	3.000	YREF						
.000	.000	3.000	ZHPP						
			SCALE						

		REFERENCE INFORMATION		SC. FT.	INCHES	INCHES	INCHES	INCHES	INCHES
BETA	P0-JET	RNL	SREF	.7245	7.8823	15.1152	12.9510	.0000	.0000
.000	.000	3.000	LREF						
.000	.000	3.000	EREF						
.000	.000	3.000	ZREF						
.000	.000	3.000	YREF						
.000	.000	3.000	ZHPP						
			SCALE						



## **BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)**

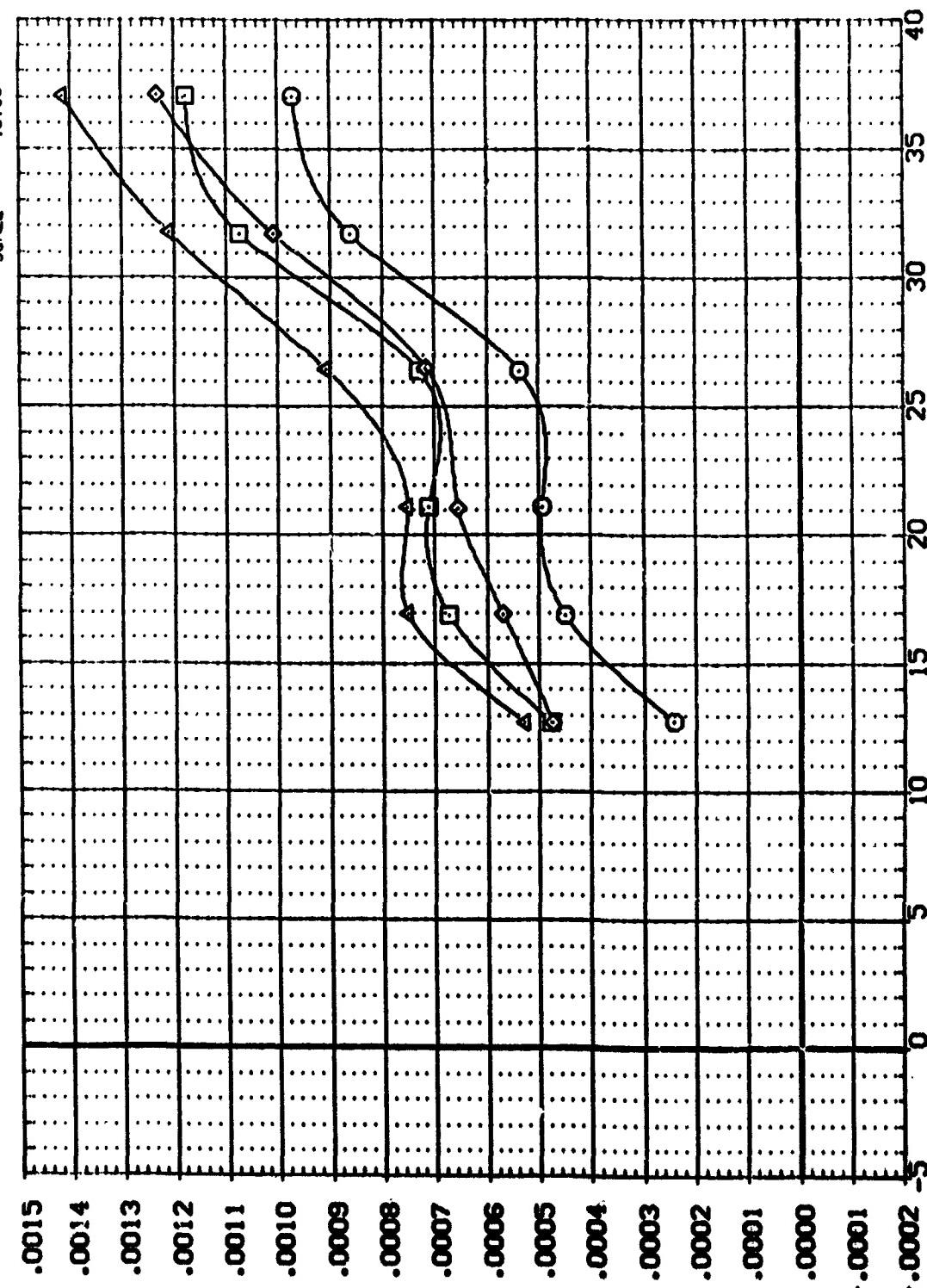
$$\text{GDP}_{\text{CH}} = 2.95$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

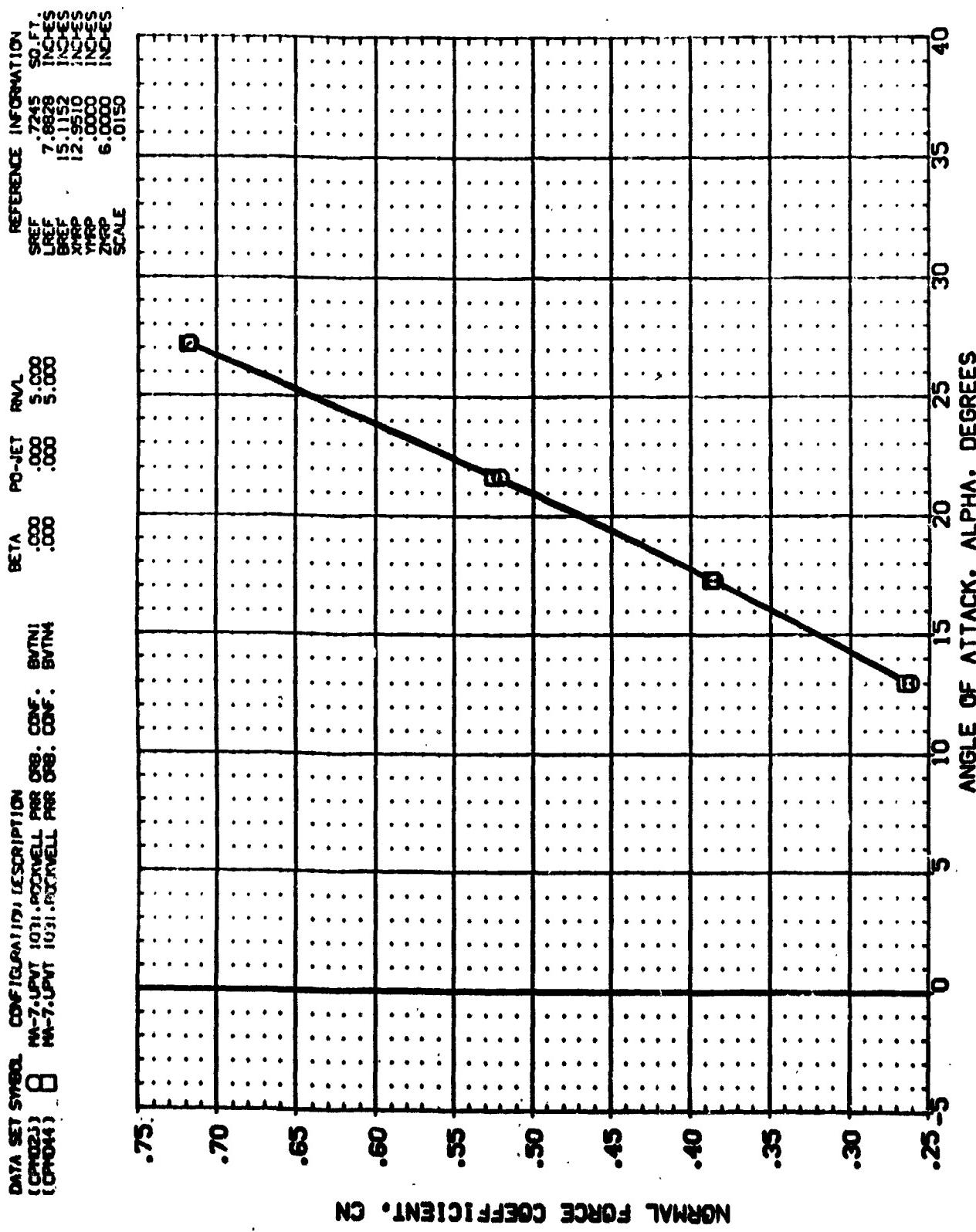
(BPT016)	MA-7, UPN	1031, ROCKWELL	PRR	CONF.	BMTN1	.000	.000	RNL
(BPT036)	MA-7, UPN	1031, ROCKWELL	PRR	CONF.	BMTN4	.000	.000	
(BPT055)	MA-7, UPN	1031, ROCKWELL	PRR	CONF.	BVTN40	.000	.000	
(BPT057)	MA-7, UPN	1031, ROCKWELL	PRR	CONF.	BVTN41	.000	.000	

REFERENCE INFORMATION

SREF	.7245	22 FT
LREF	7.8828	IN-ES
BREF	15.1152	IN-ES
XMRP	12.5513	IN-ES
YRP	6.3339	IN-ES
ZRP	.0155	C.G.

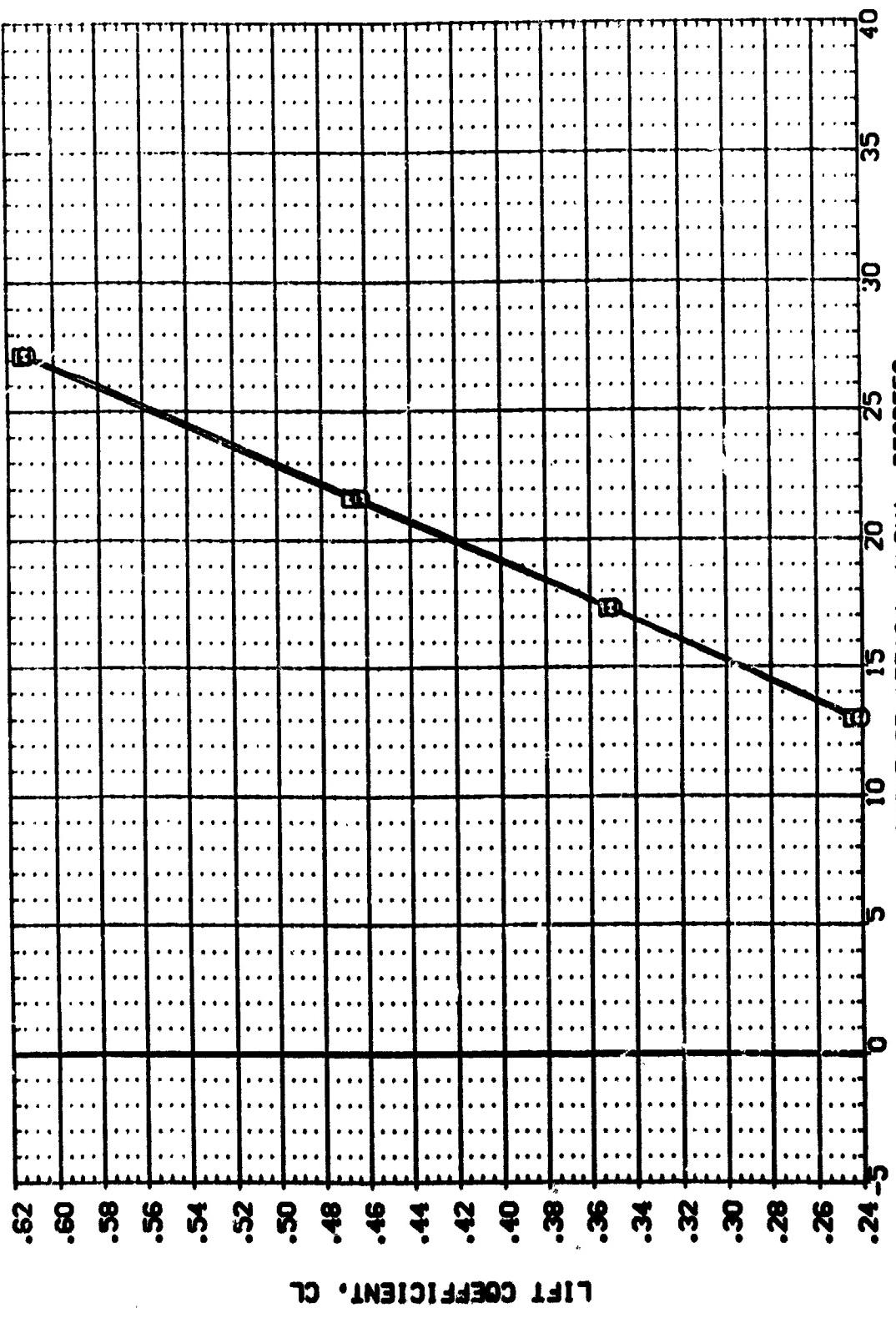


BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 3 MILLION)  
(C<sub>MACH</sub> = 4.00)



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(DPO23) MA-7-UPVT 1031-ROCKWELL PER 088. CONF: BMTN1  
(DPO44) MA-7-UPVT 1031-ROCKWELL PER 088. CONF: BMTN4

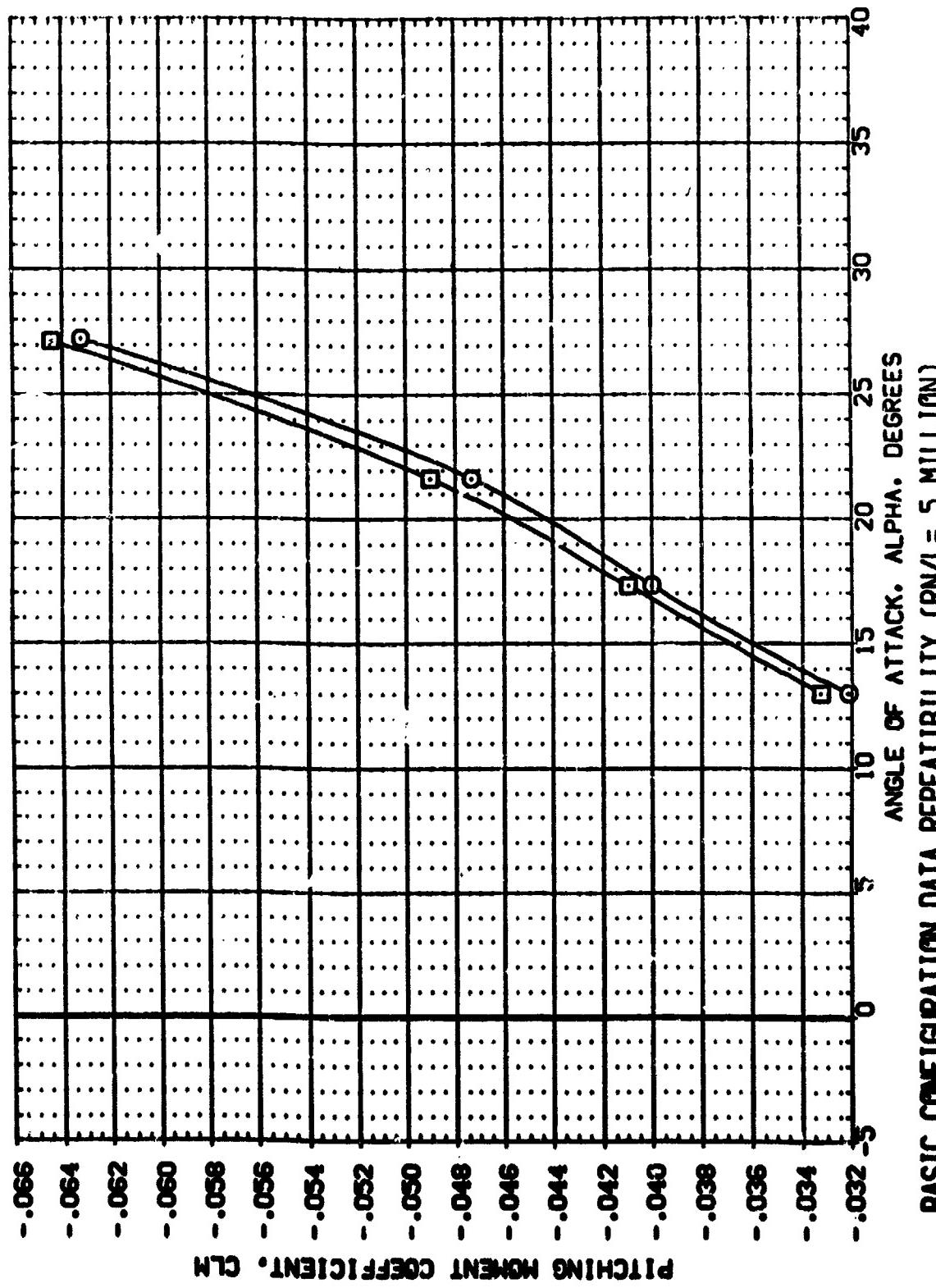
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SREF .7245 SC.FT.  
LREF 7.8828 INCHES  
BREF 15.152 INCHES  
XREF 12.9519 INCHES  
YREF 6.0000 INCHES  
ZREF 6.0150 INCHES  
SCALE



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 5 MILLION)  
(VMACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(CROSS) 8 MA-7-JPT 1031 REINVELL PNR CONF. CONF.  
(CROSS) MA-7-LPT 1031 REINVELL PNR CONF. CONF.

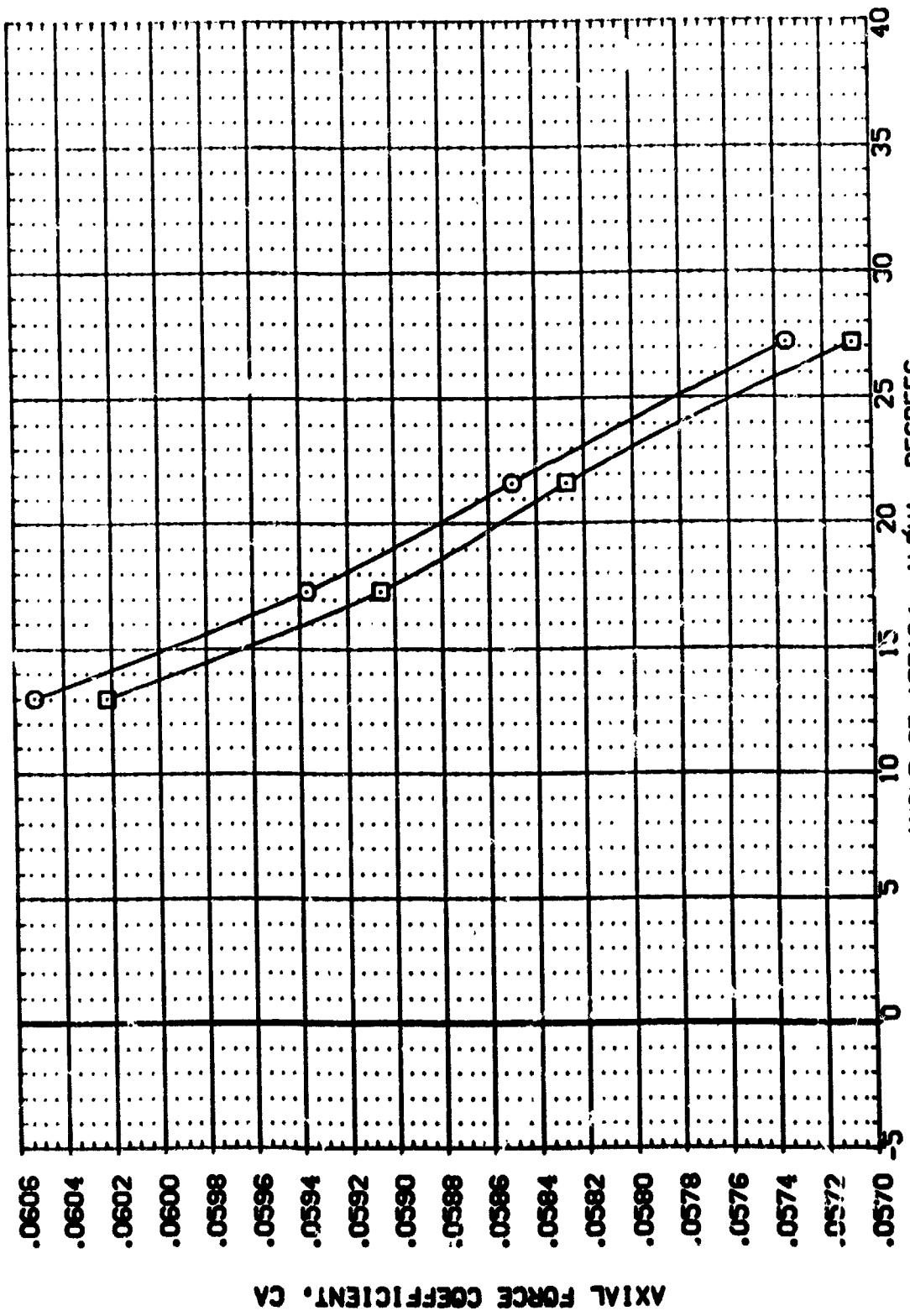
REFERENCE INFORMATION  
SREF SC. FT.  
LREF 7.8828 INCHES  
SREF 15.1152 INCHES  
XHSP 12.9610 INCHES  
YHSP 6.0000 INCHES  
ZHSP .0150 SCALE



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 5 MILLION)  
(A) MACH = 4.00.

DATA SET NAME: CONFIGURATION DESCRIPTION: MA-7, UPN 1001, ROCKWELL, PAR GRB, COEF.  
(OPM25) 8 MA-7, UPN 1001, ROCKWELL, PAR GRB, COEF.  
(OPM4)

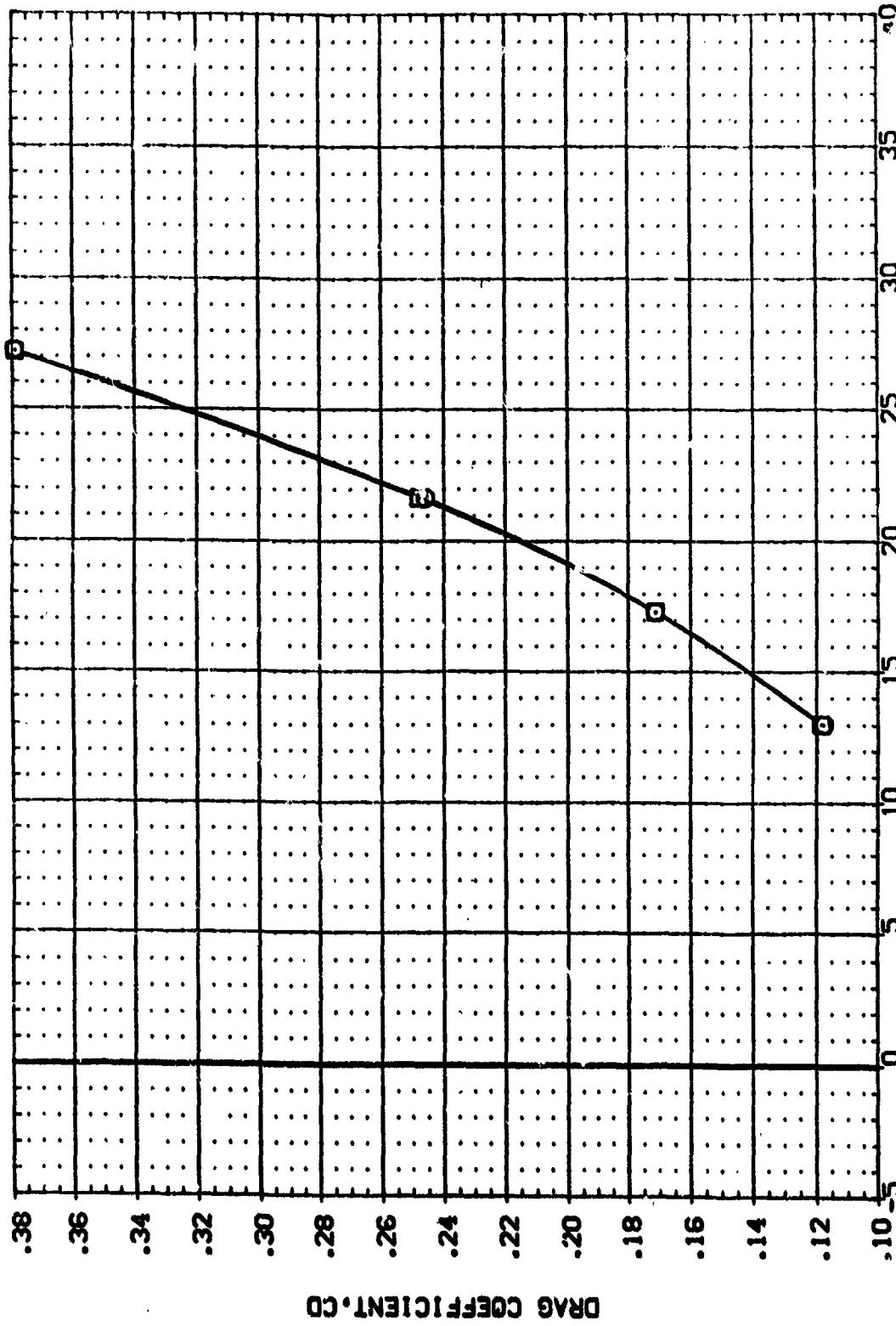
REFERENCE INFORMATION  
SREF .7245 SC.FT.  
LREF 7.8828 INCHES  
BREF 15.1152 INCHES  
XMRP 12.563 INCHES  
YMRP 6.000 INCHES  
ZMRP .0150 INCHES  
SCALE



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 5 MILLION)  
C<sub>MACH</sub> = 4.00

DATA SET SYMBOL: CONFIGURATION DESCRIPTION  
(CPD025) MA-7, UPN 1031, ROCKWELL PRR 058. CONF: BYTN1  
(CPD14) MA-7, UPN 1031, ROCKWELL PRR 058. CONF: BYTN4

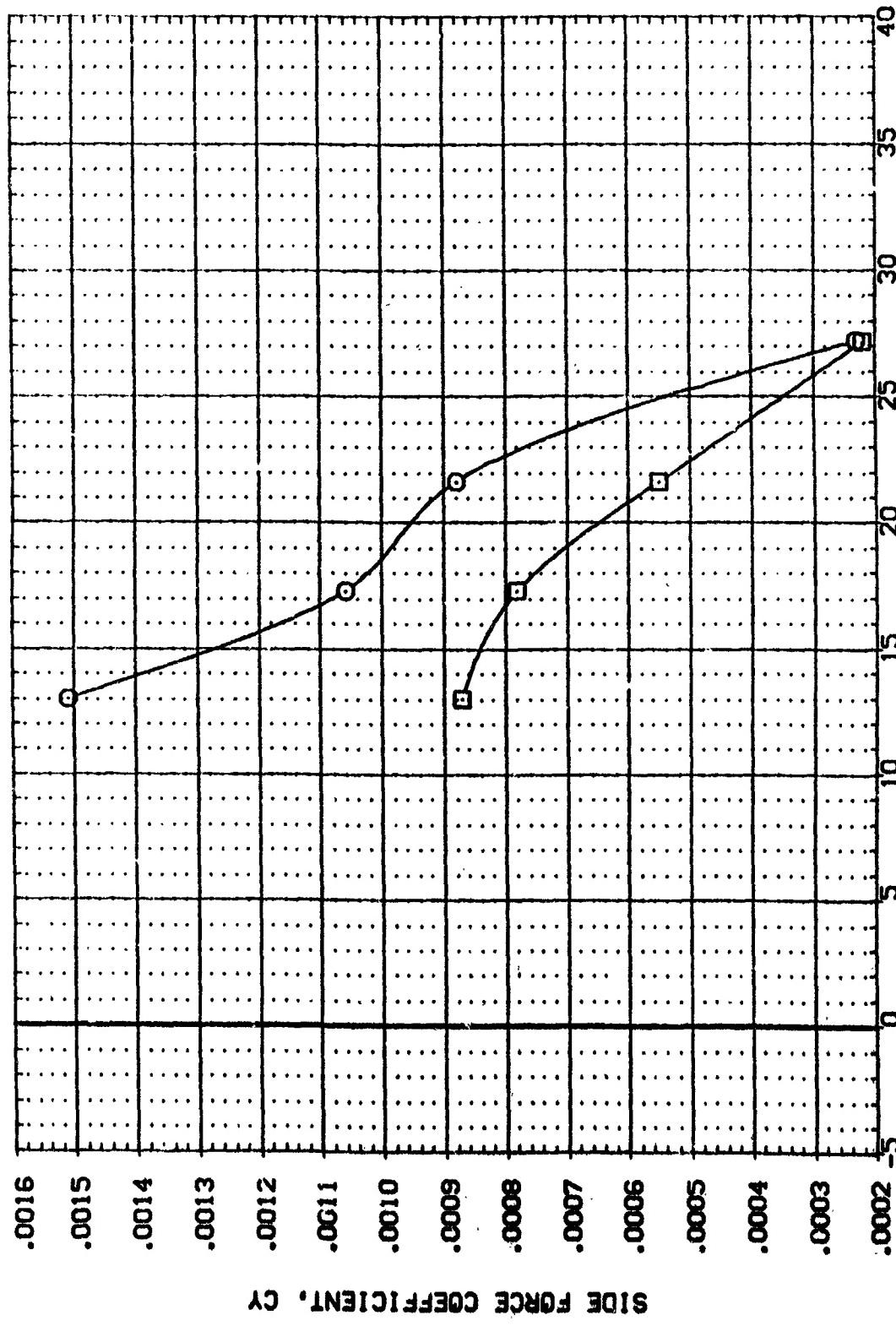
REFERENCE INFORMATION  
SREF 7245 SQ.FT.  
LREF 7.8822 INCHES  
BREF 15.1152 INCHES  
XRP 12.9510 INCHES  
YRP 6.0000 INCHES  
ZRP .0150 INCHES  
SCALE



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 5 MILLION)  
C<sub>A</sub>MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CPD025) MA-7-UPVT 1031, REYNELL PRR ORG. CONF: BYTN1  
 (CPD044) MA-7-UPVT 1031, REYNELL PRR ORG. CONF: BYTN4

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.8510 INCHES  
 YREF .00000 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150

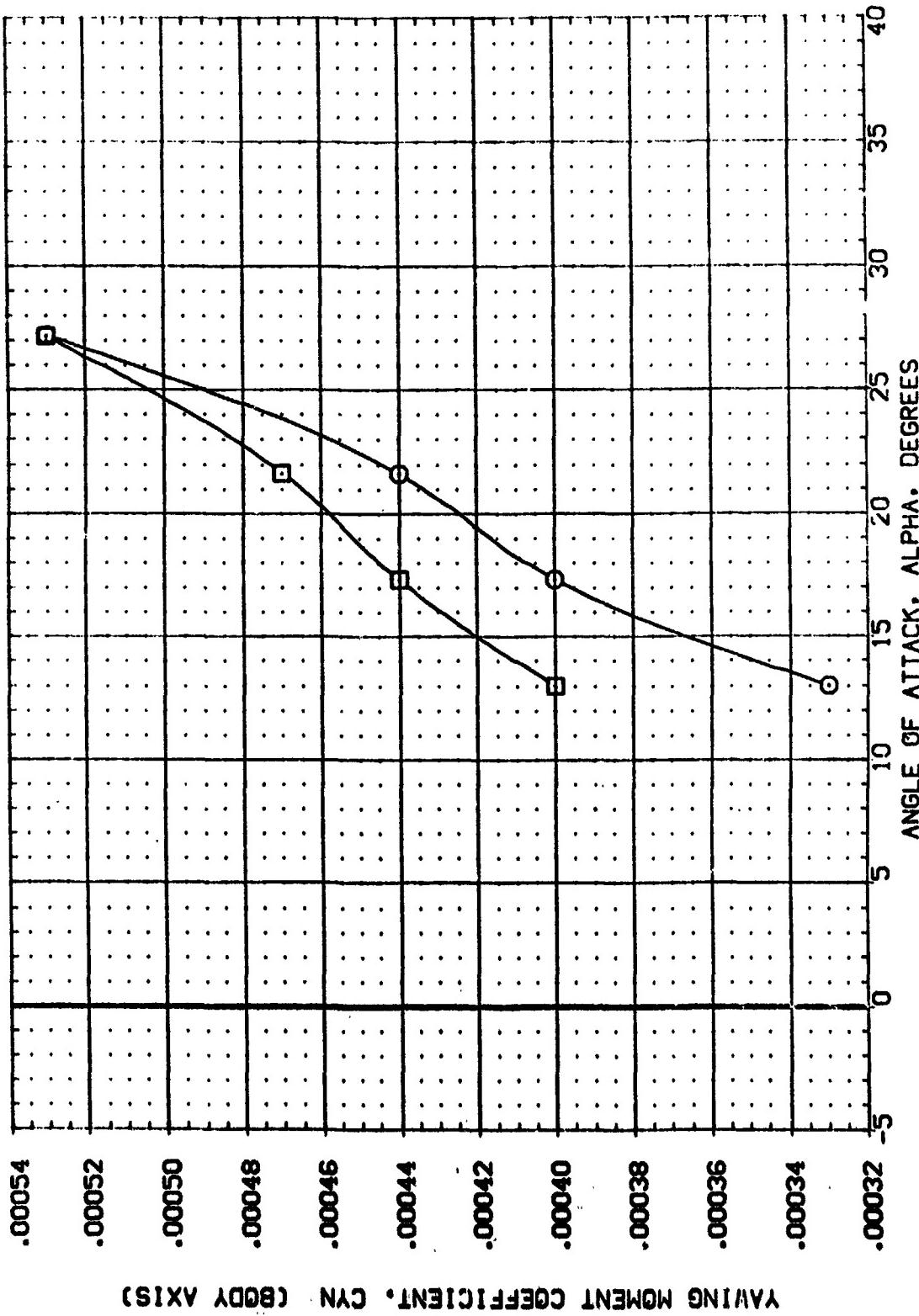


SIDE FORCE COEFFICIENT, C<sub>y</sub>

BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 5 MILLION)  
 CA/MACH = 4.00

DATA SET SPEC. CONFIGURATION DESCRIPTION  
 (CP025) C MA-7, SPAT 1031, ROCKWELL PRR GRB. CONF: BWTNA  
 (Config) L MA-7, SPAT 1031, ROCKWELL PRR GRB. CONF: BWTNA

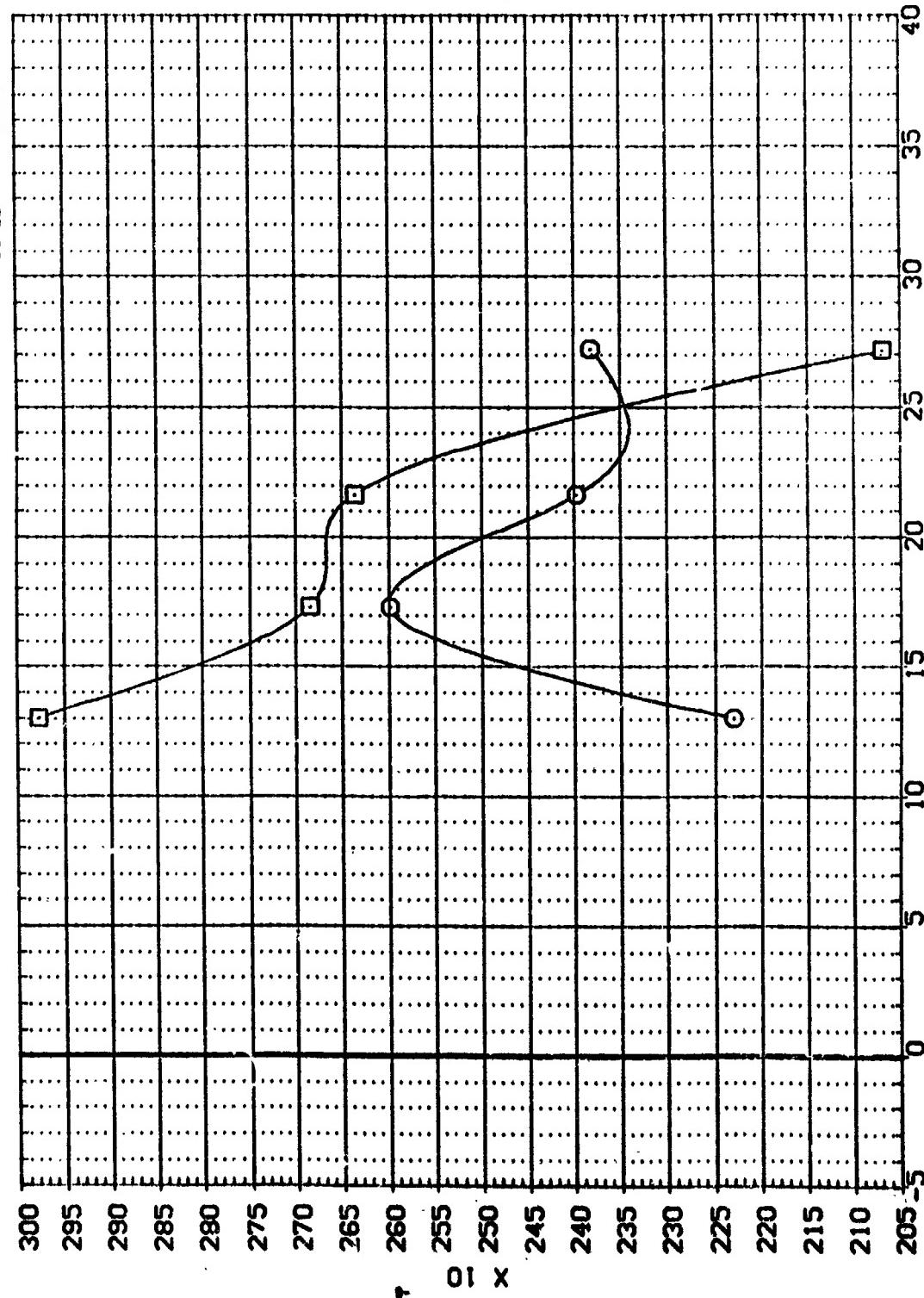
	REFERENCE INFORMATION
SREF	7245 SO. FT.
LREF	7-8828 INCHES
BREF	5.1152 INCHES
XRP	2.5610 INCHES
YRP	6.0000 INCHES
ZRP	6.3150 INCHES
SCALE	



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 5 MILLION)  
 (V)MACH = 4.00

DATA SET SYM# CONFIGURATION DESCRIPTION  
(CP7025) MA-7, UPN 1031, ROCKWELL PRR GRB, CCNF : EVTN1  
(CP7044) MA-7, UPN 1031, ROCKWELL PRR GRB, CCNF : EVTN4

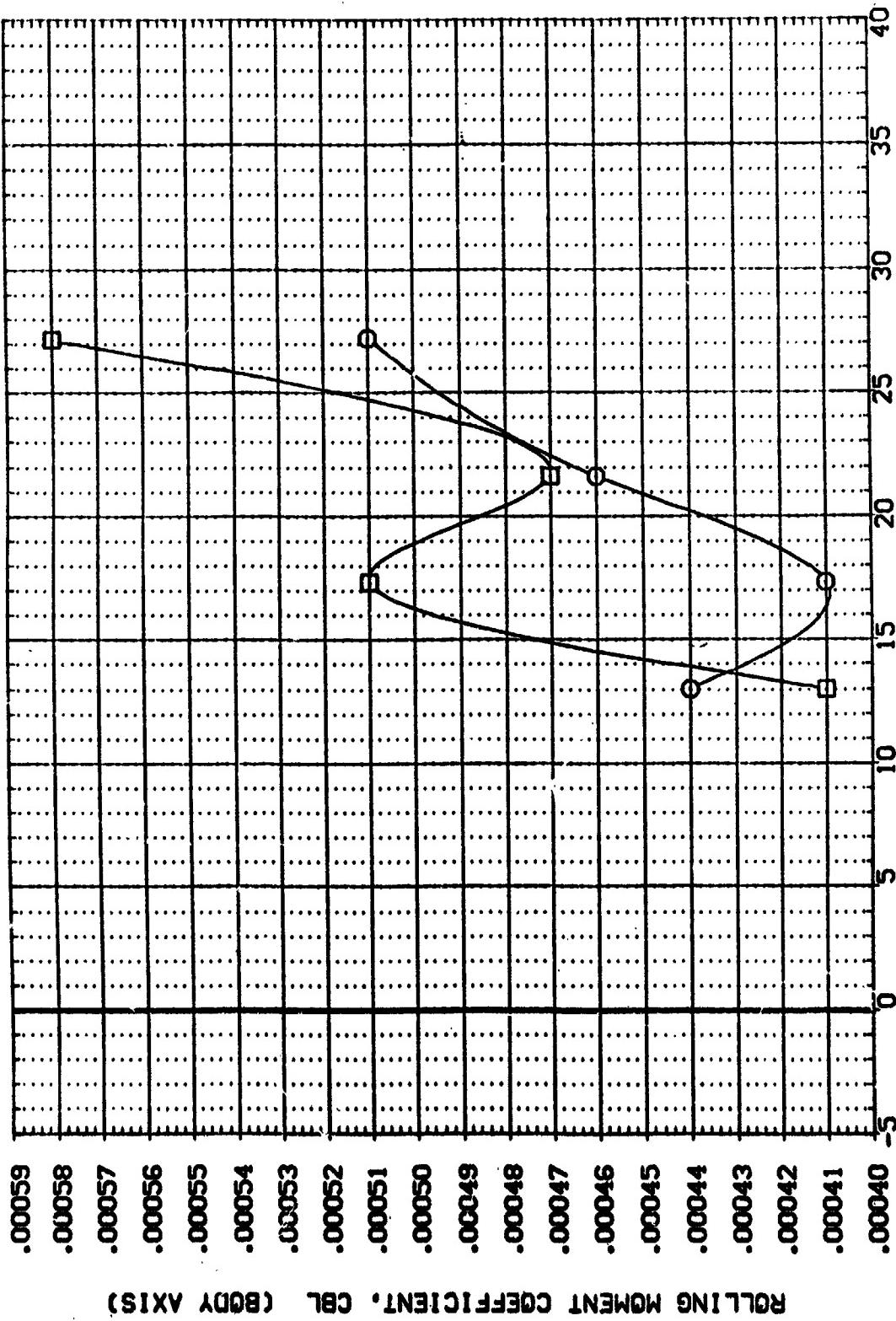
REFERENCE INFORMATION  
SREF .7245 SO. FT.  
LREF 7.8923 INCHES  
BREF 15.1152 INCHES  
XRP 12.9510 INCHES  
YRP 1.0000 INCHES  
ZRP 6.3530 INCHES  
SCALE .350



BASIC CONFIGURATION DATA REPEATABILITY (RN/L = 5 MILLION)  
 $(\bar{\alpha})_{MACH} = 4.00$

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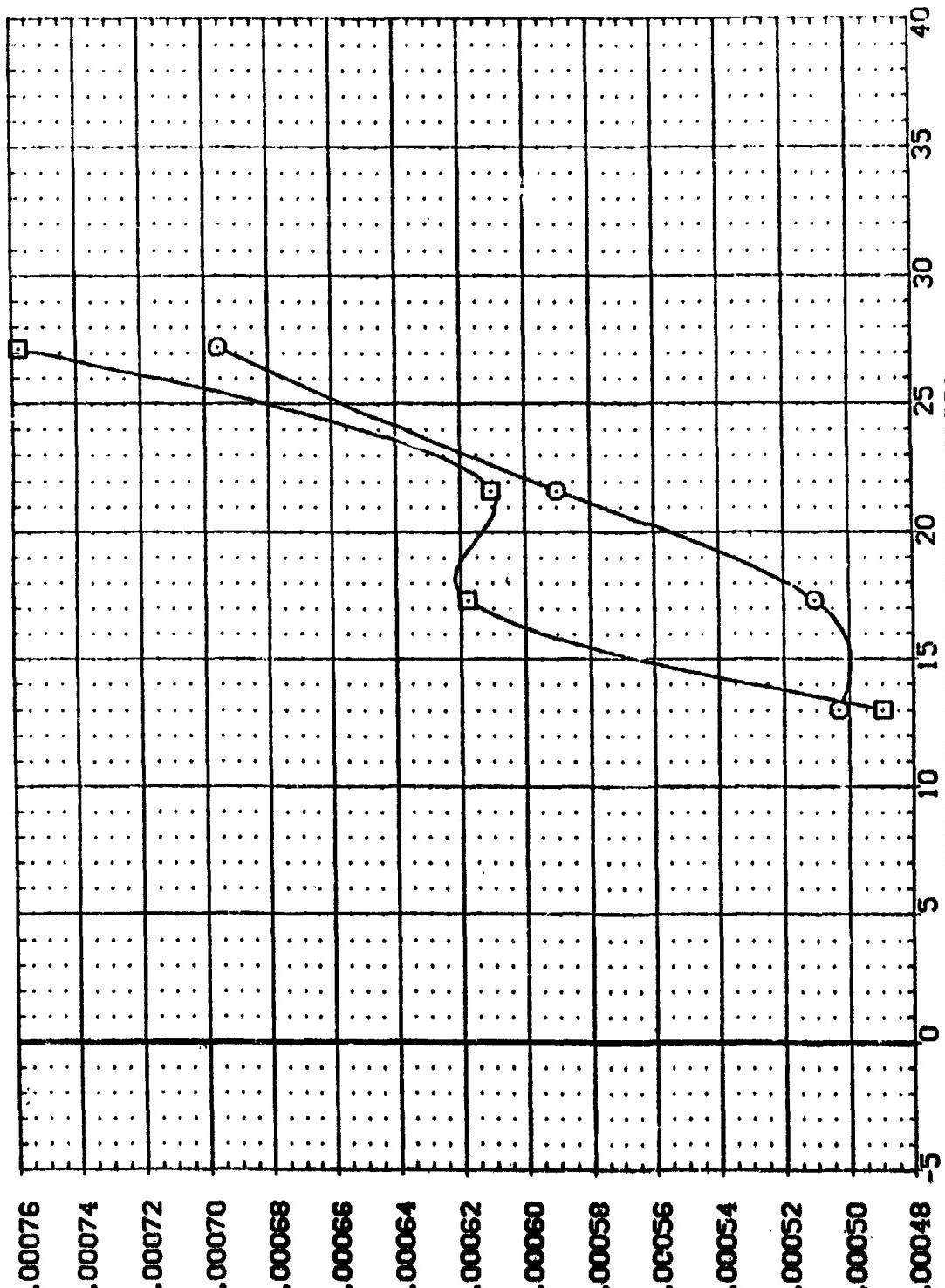
DATA SET SYMBOL: CONFIGURATION DESCRIPTION: MA-7, UPAT 1001, REEVELL PRR ORB. COEF.  
 (CNSD4); 8 MA-7, UPAT 1001, REEVELL PRR ORB. COEF.  
 (CNSD4); 8  
 REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP .0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150



BASIC CONFIGURATION DATA REPEATABILITY (CRN/L = 5 MILLION)  
 $(\Delta MACH = 4.00)$

DATA SET NAME: CONFIGURATION DESCRIPTION: MA-7.UPT 1031.ROCKWELL PRR CONF: BVTN1  
(CR025) □ MA-7.UPT 1031.ROCKWELL PRR CONF: SVTN4  
(CR024)

REFERENCE INFORMATION  
SREF .7245 SQ.FT.  
LREF 7.8928 INCHES  
BREF 15.1152 INCHES  
XREF 12.9510 INCHES  
YREF 6.0000 INCHES  
ZREF .0150 INCHES  
SCALE



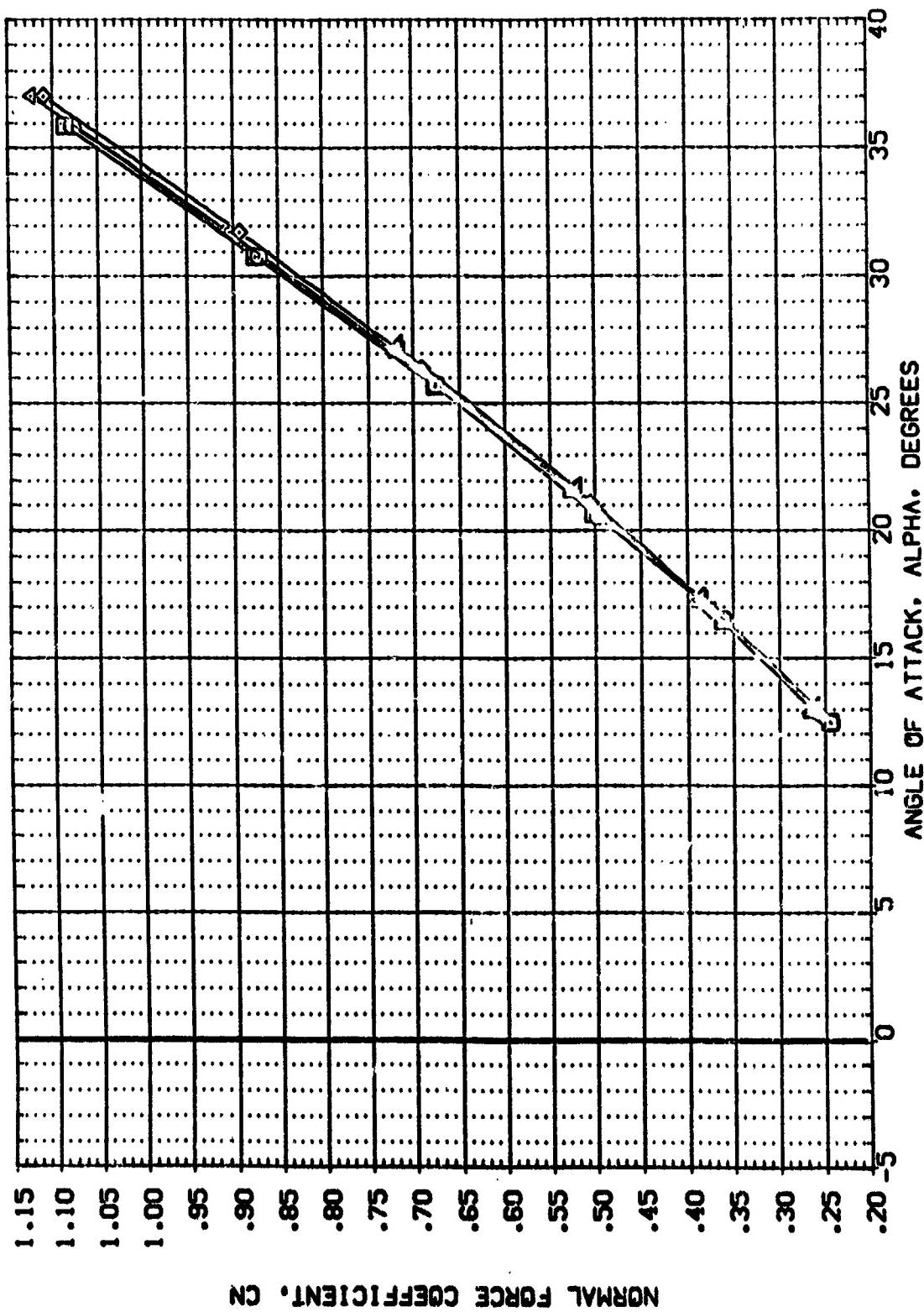
ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

BASIC CONFIGURATION DATA REPEATABILITY (CRN/L = 5 MILLION)  
(MACH = 4.00)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	P0-JET	RNL
(CPD021)	MA-7. UPN 1031. ROCKWELL PRR G38. CONF. BVTN4	.000	.000	1.000
(CPD040)	MA-7. UPN 1031. ROCKWELL PRR G38. CONF. BVTN4	.000	.000	3.000
(CPD024)	MA-7. UPN 1031. ROCKWELL PRR G38. CONF. BVTN4	.000	.000	3.000
(CPD043)	MA-7. UPN 1031. ROCKWELL PRR G38. CONF. BVTN4	.000	.000	5.000
(CPD026)	MA-7. UPN 1031. ROCKWELL PRR G38. CONF. BVTN4	.000	.000	5.000
(CPD044)	MA-7. UPN 1031. ROCKWELL PRR G38. CONF. BVTN4	.000	.000	5.000

REFERENCE INFORMATION

REFERENCE	SQ. FT.	INCHES
SREF	.7245	
LREF	.8828	
BREF	15.1152	
X <sup>2</sup> R <sup>2</sup>	12.9510	
Y <sup>2</sup> R <sup>2</sup>	6.0000	
Z <sup>2</sup> R <sup>2</sup>	.0150	
SCALE		

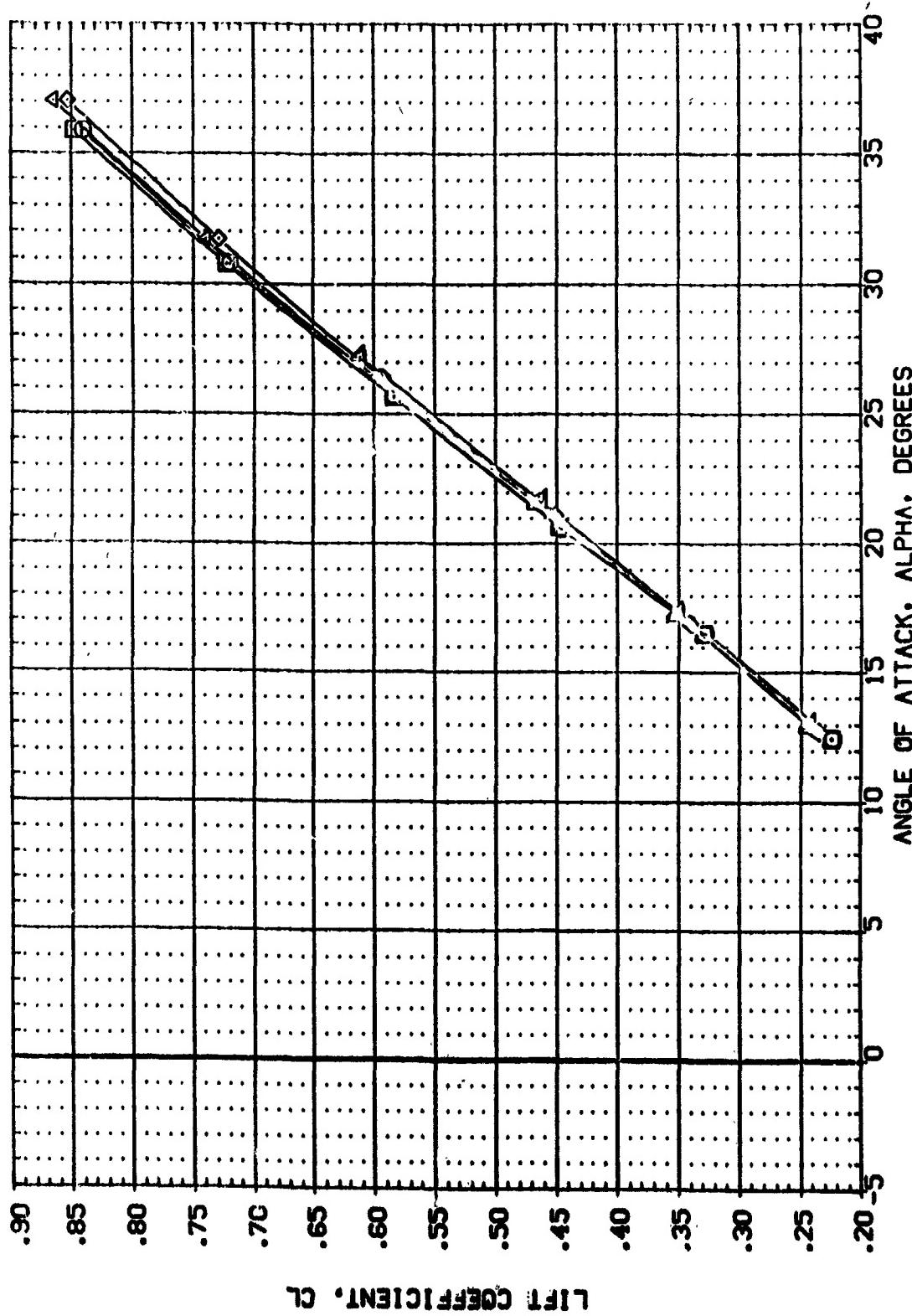


### EFFECT OF REYNOLDS NUMBER

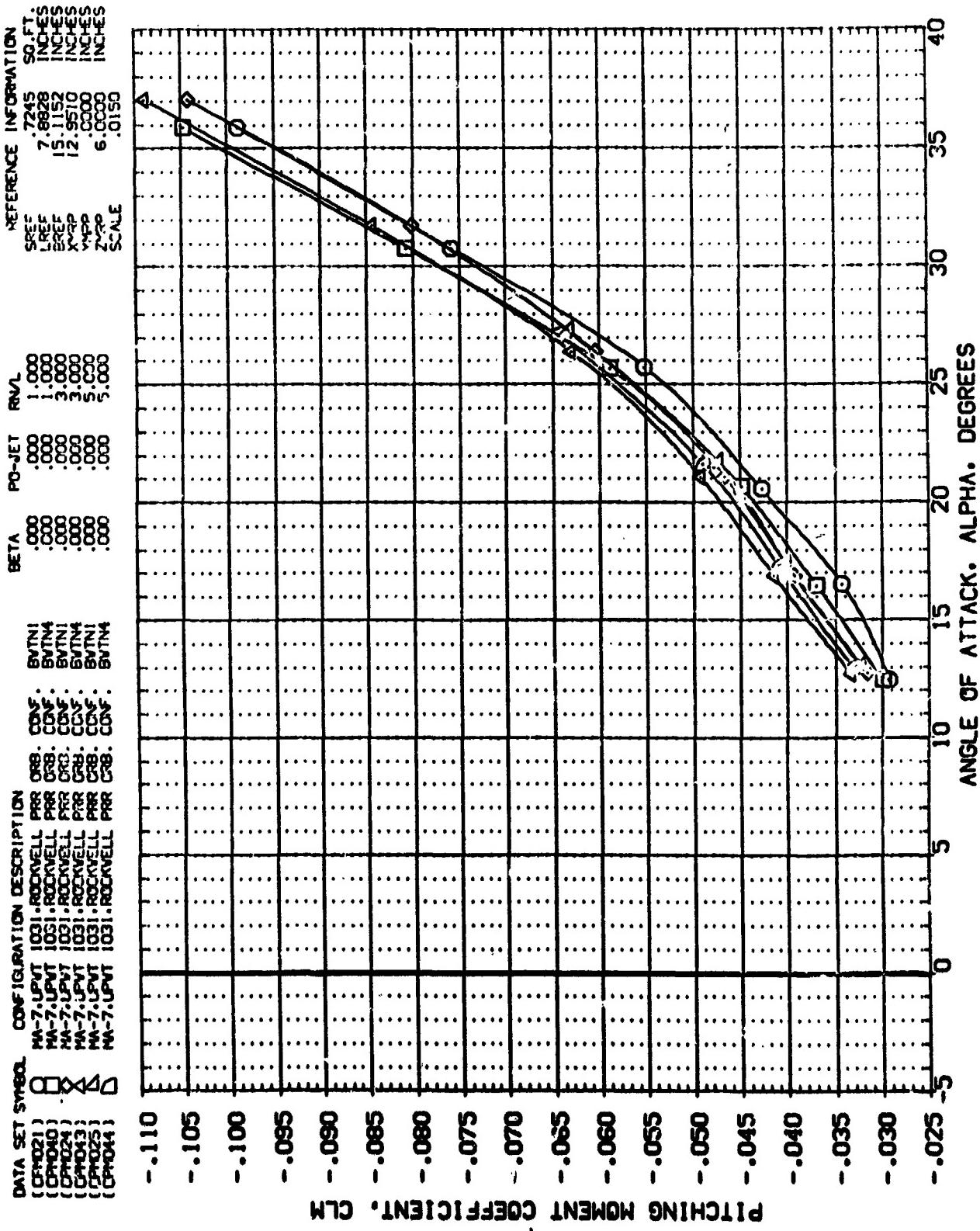
$C_{A,MACH} = 4.00$

DATA SET NAME CONFIGURATION DESCRIPTION  
 CPM021 MA-7, UPVT 1031, ROCKWELL, PRR, CONF.  
 CPM020 MA-7, UPVT 1031, ROCKWELL, PRR, CONF.  
 CPM021 MA-7, UPVT 1031, ROCKWELL, PRR, CONF.  
 CPM023 MA-7, UPVT 1031, ROCKWELL, PRR, CONF.  
 CPM025 MA-7, UPVT 1031, ROCKWELL, PRR, CONF.  
 CPM044 MA-7, UPVT 1031, ROCKWELL, PRR, CONF.

REFERENCE INFORMATION  
 SREF 7245 SC.FT.  
 LREF 7.8826 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP .0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .3150



EFFECT OF REYNOLDS NUMBER  
 APPROXIMATE = 4.00

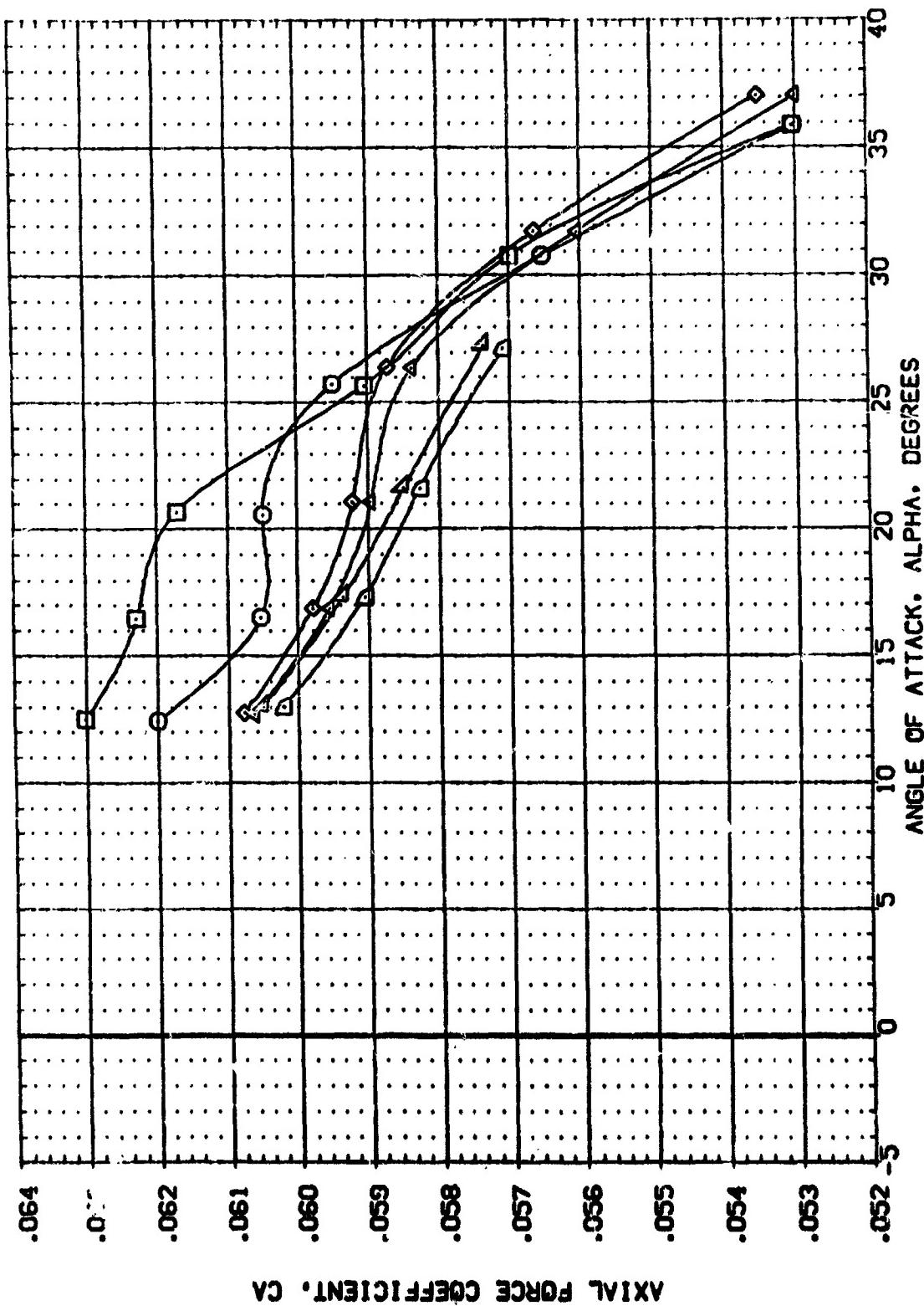


EFFECT OF REYNOLDS NUMBER  
 $\text{REYNOLDS} = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CPM021)	MA-7, UPVT	1031, ROCKWELL	PAR	CONF:
(CPM040)	MA-7, UPVT	1031, ROCKWELL	PAR	CONF:
(CPM024)	MA-7, UPVT	1031, ROCKWELL	PAR	CONF:
(CPM043)	MA-7, UPVT	1031, ROCKWELL	PAR	CONF:
(CPM025)	MA-7, UPVT	1031, ROCKWELL	PAR	CONF:
(CPM044)	MA-7, UPVT	1031, ROCKWELL	PAR	CONF:

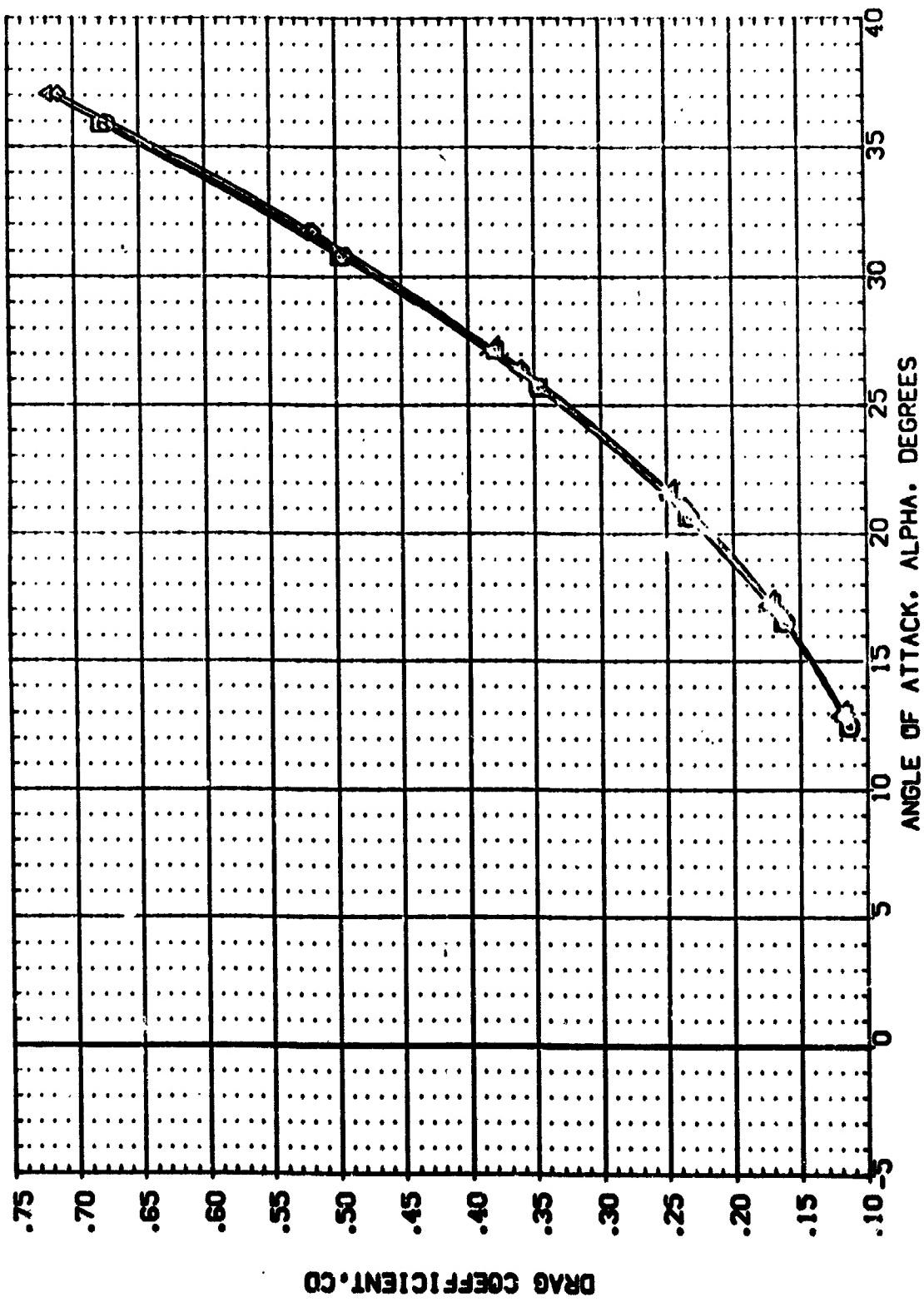
REFERENCE INFORMATION  
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 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XHPP 12.9510 INCHES  
 YHPP .0000 INCHES  
 ZHPP 6.0000 INCHES  
 SCALE .0150



EFFECT OF REYNOLDS NUMBER  
 $(\text{A})_{\text{MACH}} = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION CONF. BETA PO-JET RNL.  
 (DP021) N-7. UPN 1031. ROCKWELL PRR 008. CONF. BYTN  
 (DP022) N-7. UPN 1031. ROCKWELL PRR 008. CONF. BYTN  
 (DP023) N-7. UPN 1031. ROCKWELL PRR 008. CONF. BYTN  
 (DP024) N-7. UPN 1031. ROCKWELL PRR 008. CONF. BYTN  
 (DP025) N-7. UPN 1031. ROCKWELL PRR 008. CONF. BYTN  
 (DP026) N-7. UPN 1031. ROCKWELL PRR 008. CONF. BYTN  
 (DP027) N-7. UPN 1031. ROCKWELL PRR 008. CONF. BYTN

REFERENCE INFORMATION  
 SREF .7245 SC. FT.  
 LREF 7.8278 INCHES  
 BREF 15.152 INCHES  
 XHPP 12.9510 INCHES  
 YHPP 6.0000 INCHES  
 ZHPP .0150 SCALE



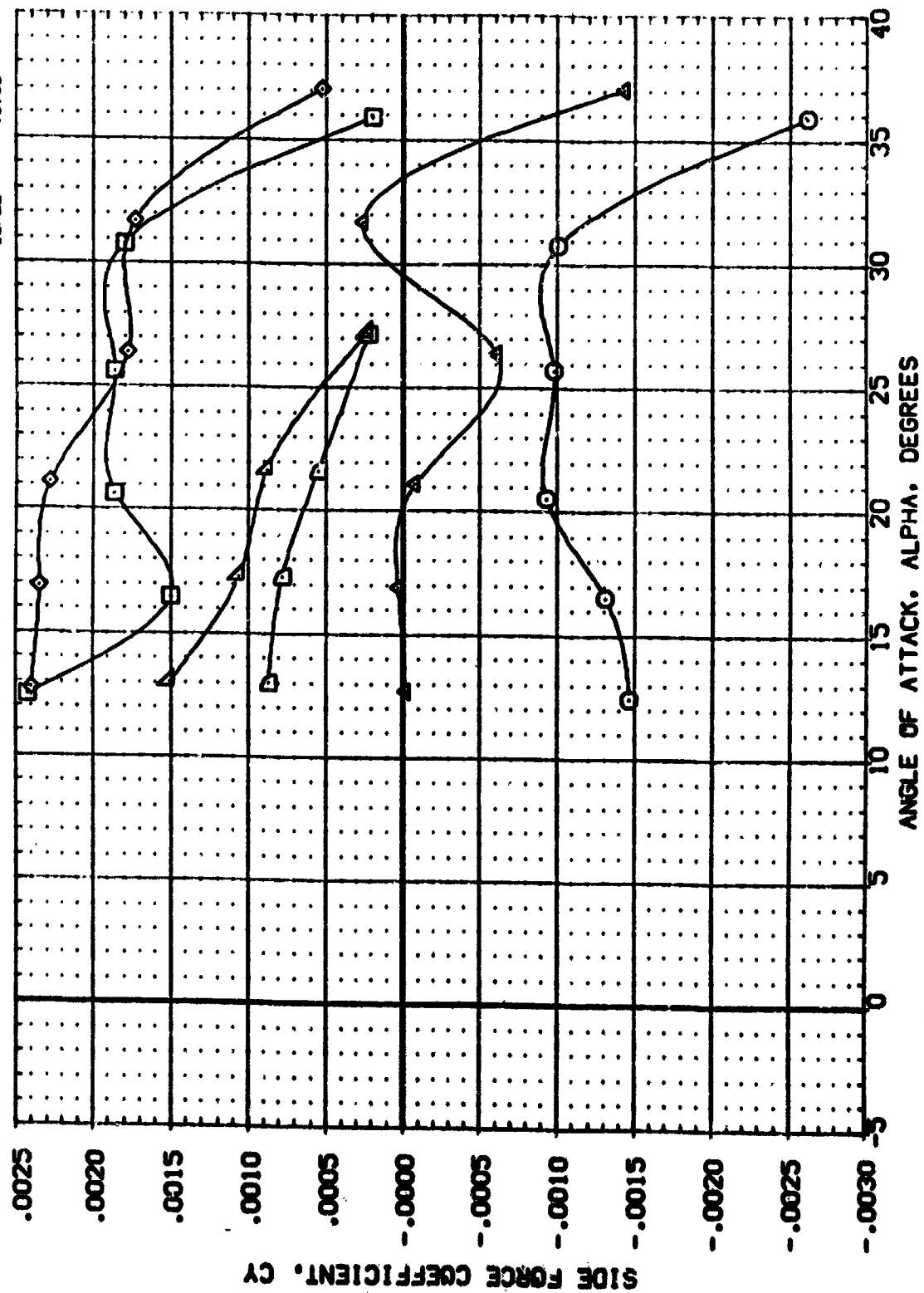
EFFECT OF REYNOLDS NUMBER  
 $(\text{MACH} = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

OPH021	□	MA-7, LIFT	1031, ROCKWELL	PAR	.005
OPH040	○	MA-7, LIFT	1031, ROCKWELL	PAR	.005
OPH024	△	MA-7, LIFT	1031, ROCKWELL	PAR	.005
OPH031	×	MA-7, LIFT	1031, ROCKWELL	PAR	.005
OPH025	▲	MA-7, LIFT	1031, ROCKWELL	PAR	.005
OPH044	◆	MA-7, LIFT	1031, ROCKWELL	PAR	.005

REFERENCE INFORMATION

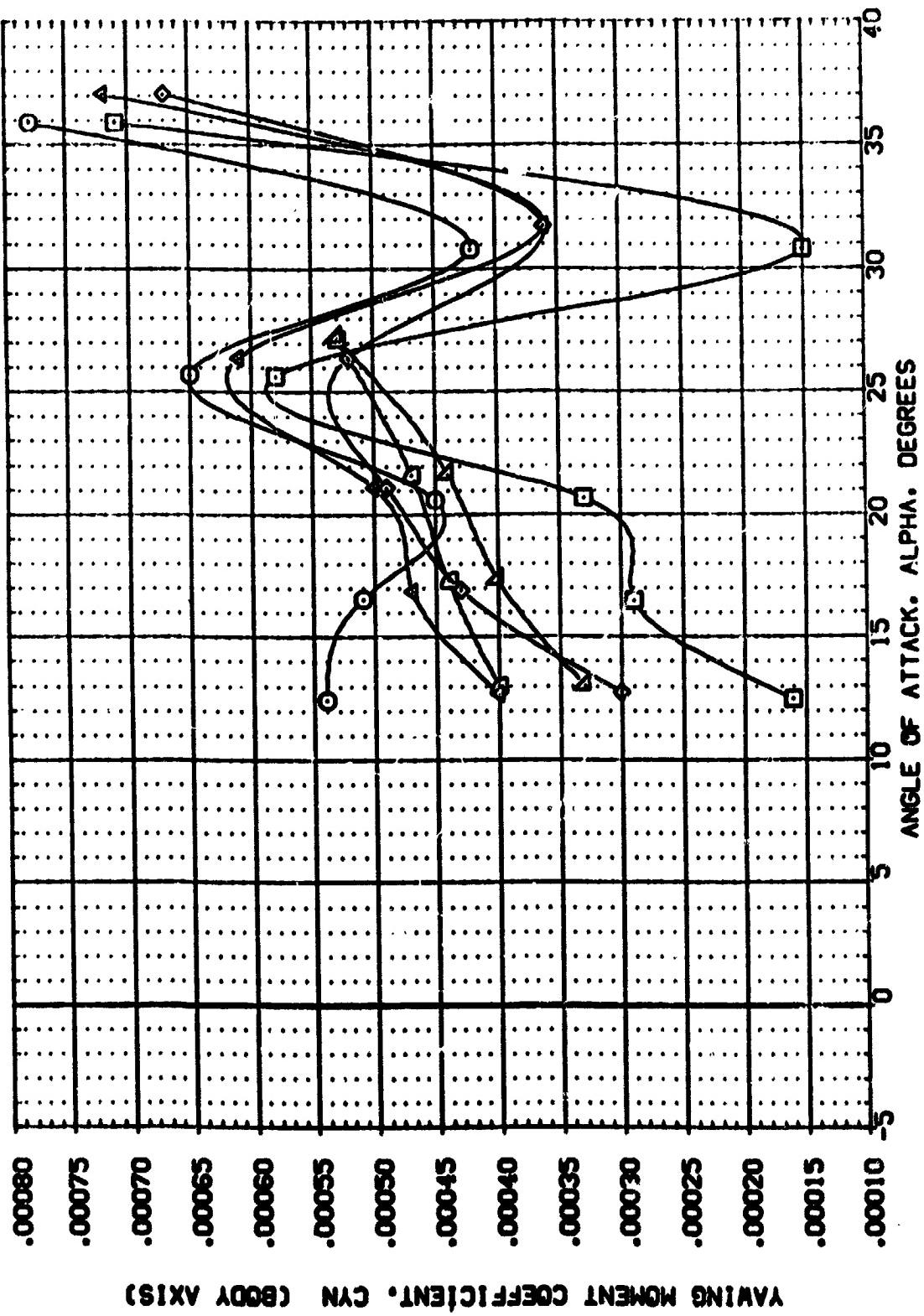
SREF	7245	SOFT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XMRP	12.9510	INCHES
YMRP	6.0000	INCHES
ZMRP	.0150	INCHES
SCALE		



EFFECT OF REYNOLDS NUMBER  
MACH = 4.00

REFERENCE INFORMATION		SO. FT.	SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.
SREF	7245					
LREF	7.8829					
BREF	15.52					
XREF	12.66					
YREF	10.00					
ZREF	6.00					
SCALE						
REV/L	1.000					
PO-JET	.000					
BETA	.000					

REFERENCE	INFERRED SO. FT.	SCALES
SREF	.7245	1:1000
LREF	7.8820	1:1000
BREF	15.12	1:1000
XREF	12.66	1:1000
YREF	6.00	1:1000
ZREF	6.00	1:1000



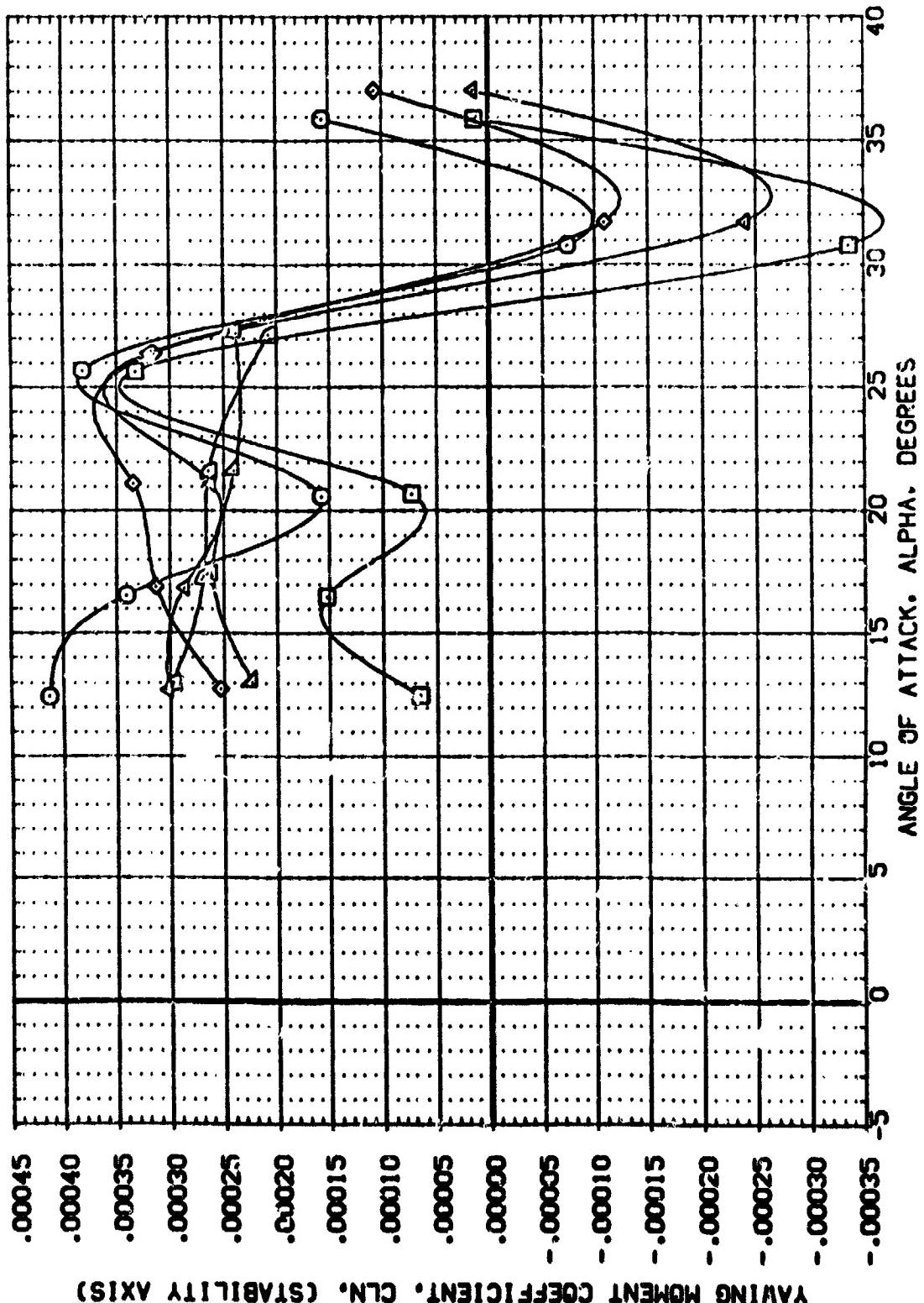
EFFECT OF REYNOLDS NUMBER  
C<sub>A</sub>MACH = 4.00

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CPG21)	MA-7. UPN	1031. ROCHWELL	PER	CG2.	BFTN1
(CPG040)	MA-7. UPN	1031. ROCHWELL	PER	CG3.	BFTN4
(CPG24)	MA-7. UPN	1031. ROCHWELL	PER	CG4.	BFTN1
(CPG34)	MA-7. UPN	1031. ROCHWELL	PER	CG5.	BFTN4
(CPG25)	MA-7. UPN	1031. ROCHWELL	PER	CG6.	BFTN4
(CPG44)	MA-7. UPN	1031. ROCHWELL	PER	CG7.	BFTN4

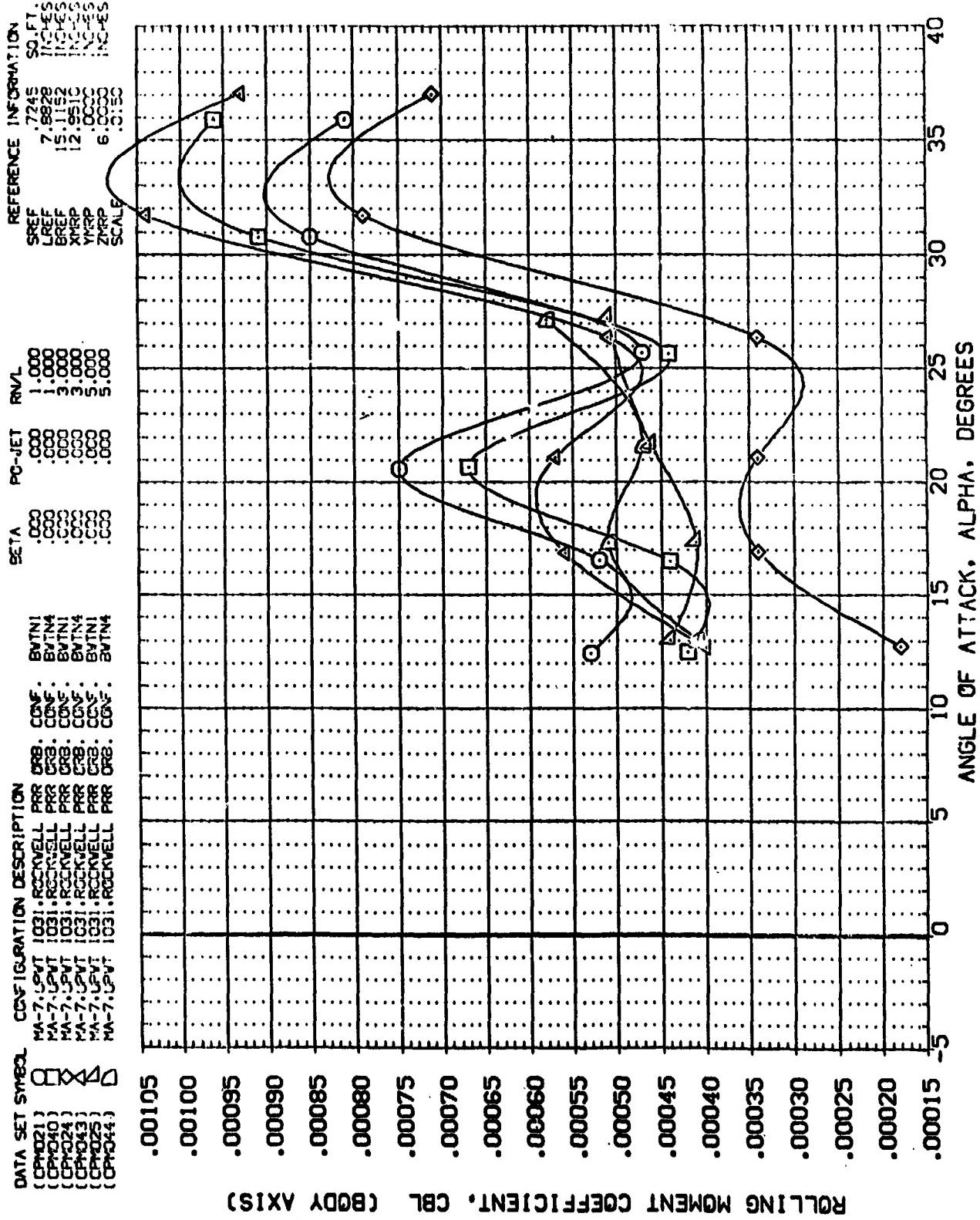
REFERENCE INFORMATION  
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 LREF 7.9828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF 0.0030 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150



EFFECT OF REYNOLDS NUMBER  
 (MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(OPP021)	□	MA-7, UVT
(OPP020)	○	MA-7, UVT
(OPP024)	×	MA-7, UVT
(OPP023)	△	MA-7, UVT
(OPP025)	◊	MA-7, UVT
(OPP044)	○	MA-7, UVT

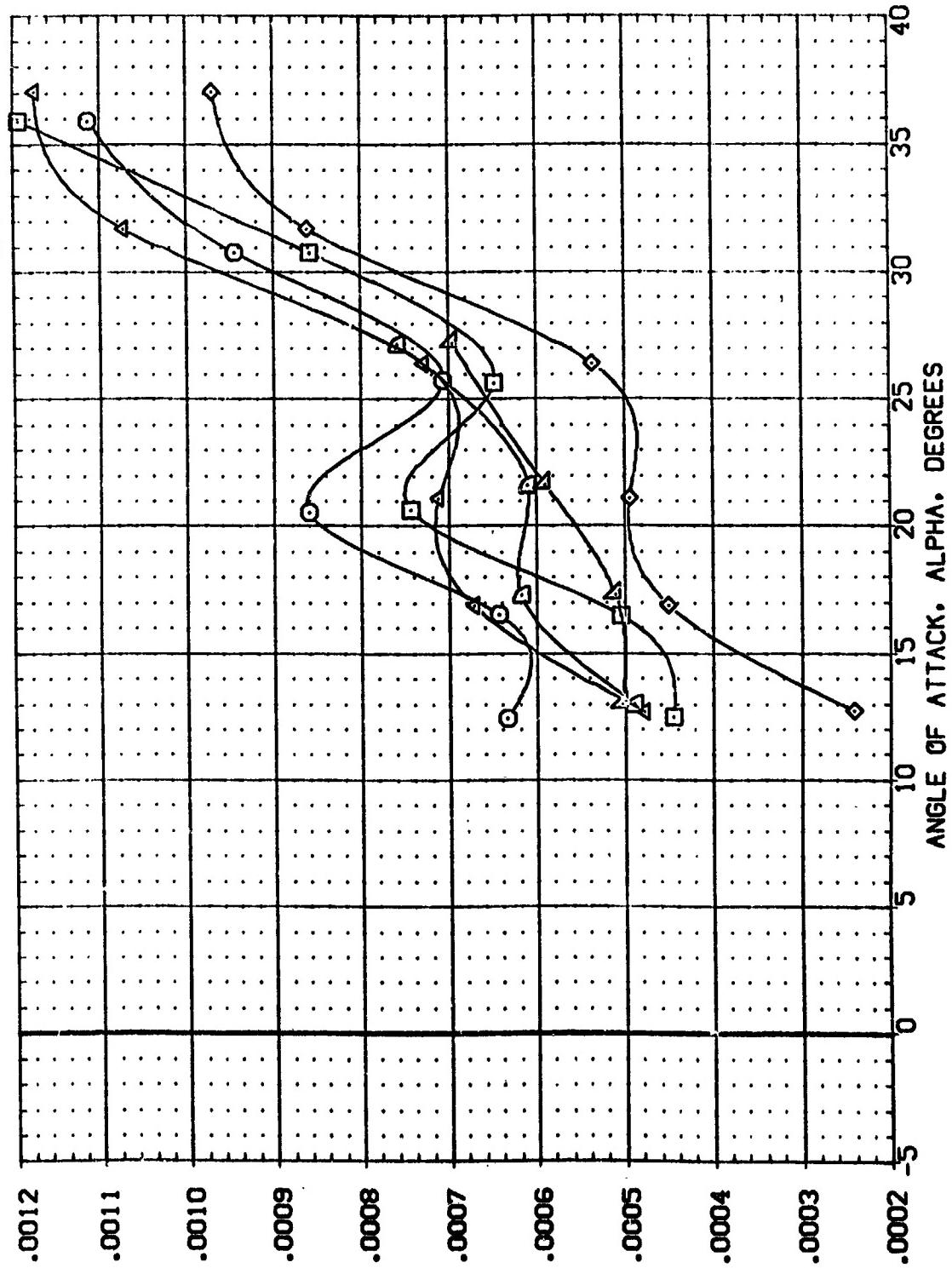


DATA SET SYMBOL CONFIGURATION DESCRIPTN

(CP021)	MA-7. UPVT	1031. ROCKWELL	PRR	CRB.	BVTFN1	CCSF.
(CP040)	MA-7. UPVT	1031. ROCKWELL	PR2	CR3.	BVTFN4	CCSF.
(CP024)	MA-7. UPVT	1031. ROCKWELL	PR2	CR3.	BVTFN1	CCSF.
(CP043)	MA-7. UPVT	1031. ROCKWELL	PR2	CR3.	BVTFN4	CCSF.
(CP025)	MA-7. UPVT	1031. ROCKWELL	PRR	CR3.	BVTFN1	CCSF.
(CP044)	MA-7. UPVT	1031. ROCKWELL	PRR	CR3.	BVTFN4	CCSF.

REFERENCE INFORMATION

SREF	.7245	SO FT.
LREF	.8828	INCHES
XREF	15.1152	INCHES
YREF	12.9510	INCHES
ZREF	.0000	INCHES
SCALE	.0150	

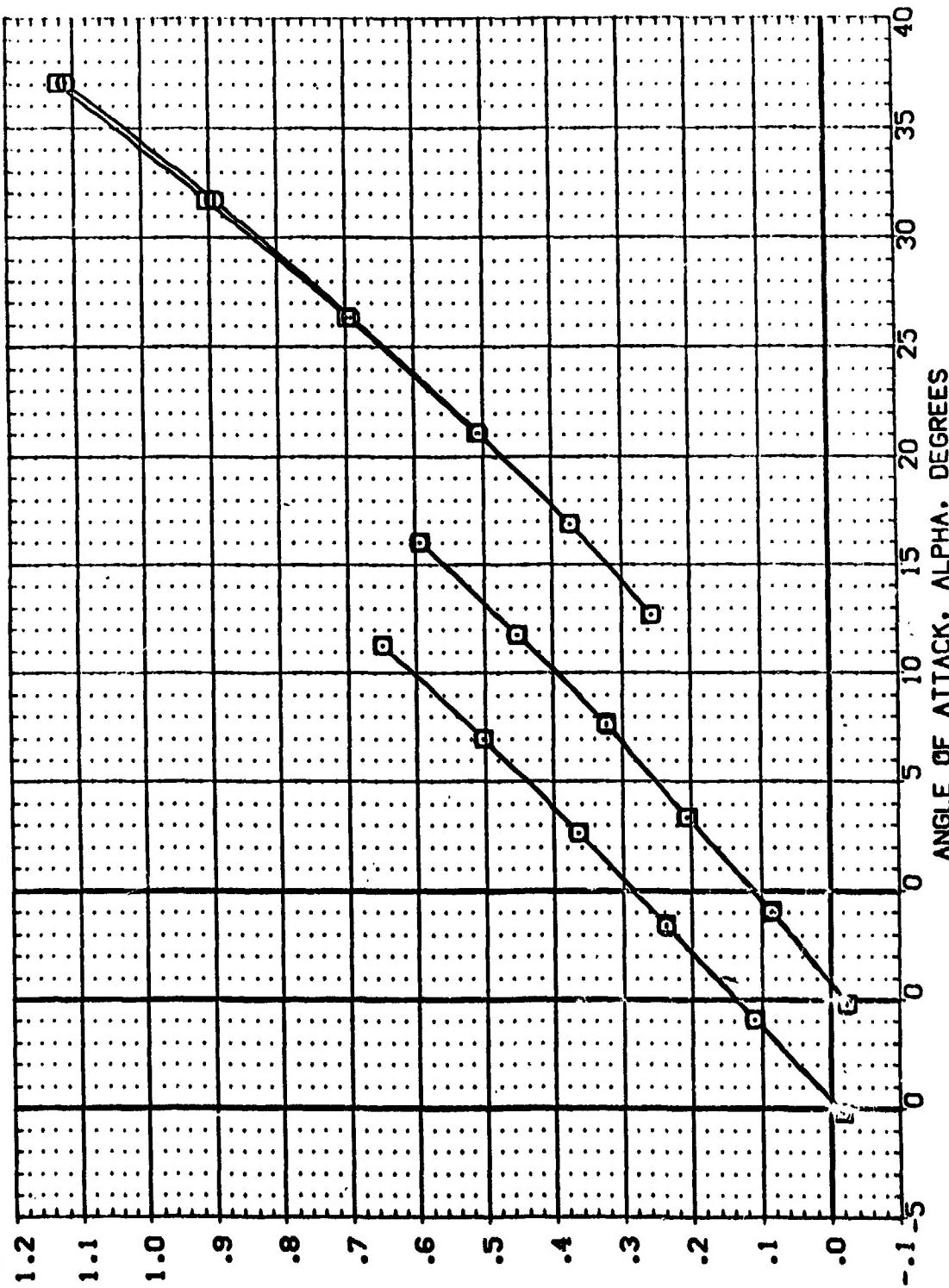


ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

EFFECT OF REYNOLDS NUMBER  
( $\Delta$ ) MACH = 4.00

DATA SET NUMBER CONFIGURATION DESCRIPTION  
 (BPN016) 8 MA-7.UPT 1031. ROCKWELL PRR CONF: BPN11  
 (BPN018) 8 MA-7.UPT 1031. ROCKWELL PRR CONF: BPN11

REFERENCE INFORMATION  
 SREF 7.7245 SC.FT.  
 LREF 7.8823 INCHES  
 BREF 15.152 INCHES  
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 YREF 6.0000 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150



NORMAL FORCE COEFFICIENT, CN

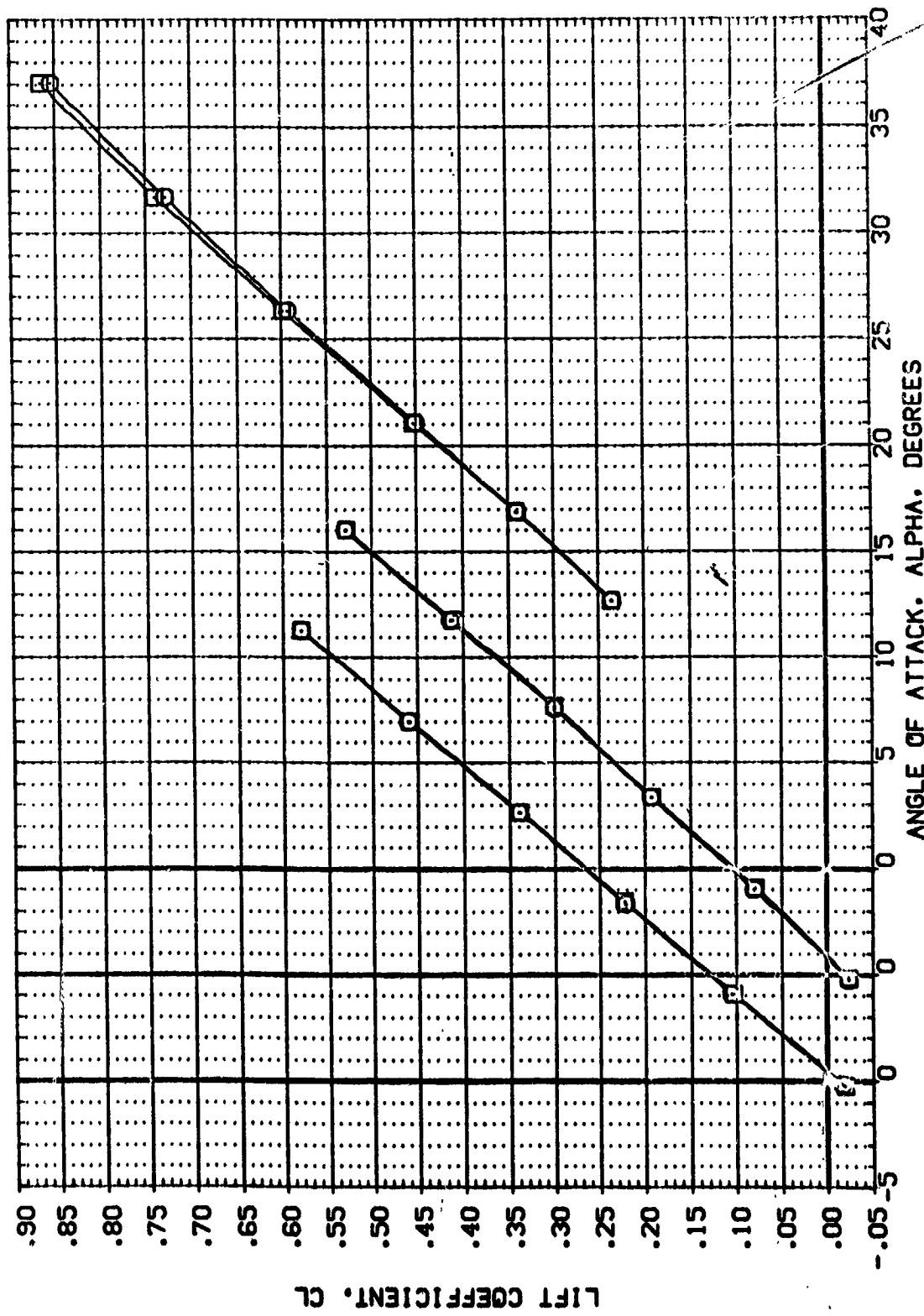
EFFECT OF MACH NO. ON BASIC CONFIGURATION

$$(\Delta)MACH = 2.50 \quad (B) \quad 2.95 \quad (C) \quad 4.00$$

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(B9016) 8 MA-7-JET 1031. ROCKWELL F/A-18 CONF: BMTN1  
(B9036) 8 MA-7-UPV 1031. ROCKWELL F/A-18 CONF: BMTN4

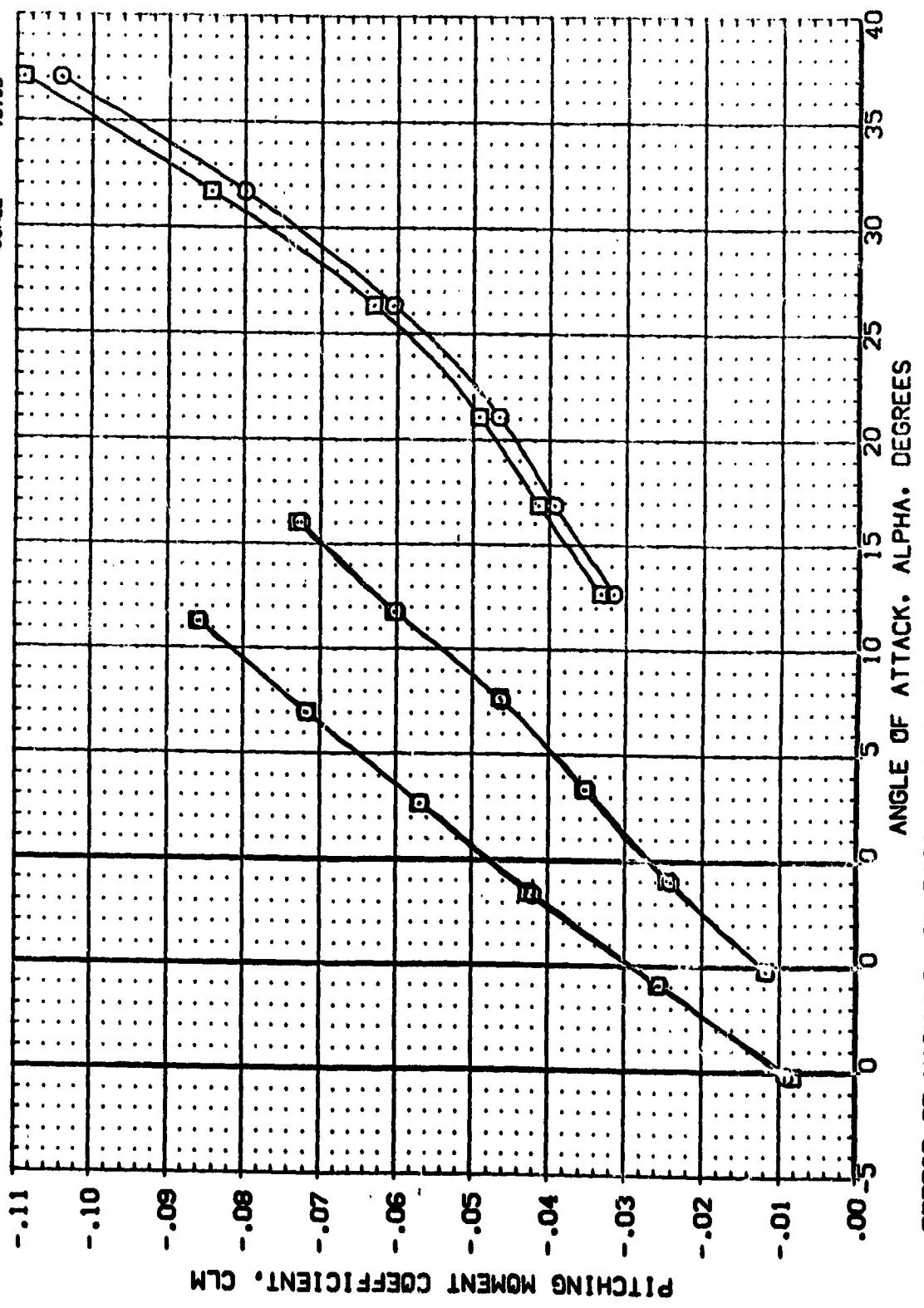
REFERENCE INFORMATION  
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LREF 7.8928 INCHES  
BREF 15.1152 INCHES  
XRP 12.9510 INCHES  
YRP .0000 INCHES  
ZRP 6.0000 INCHES  
SCALE .0150



EFFECT OF MACH NO. ON BASIC CONFIGURATION  
(A)MACH = 2.50 (B) 2.95 (C) 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (BPH016) **B** MA-7-UPNT 1031-ROCKWELL FRR DRB. CONF: BMTN1  
 (BPH036) **B** MA-7-UPNT 1031-ROCKWELL FRR DRB. CONF: BMTN4

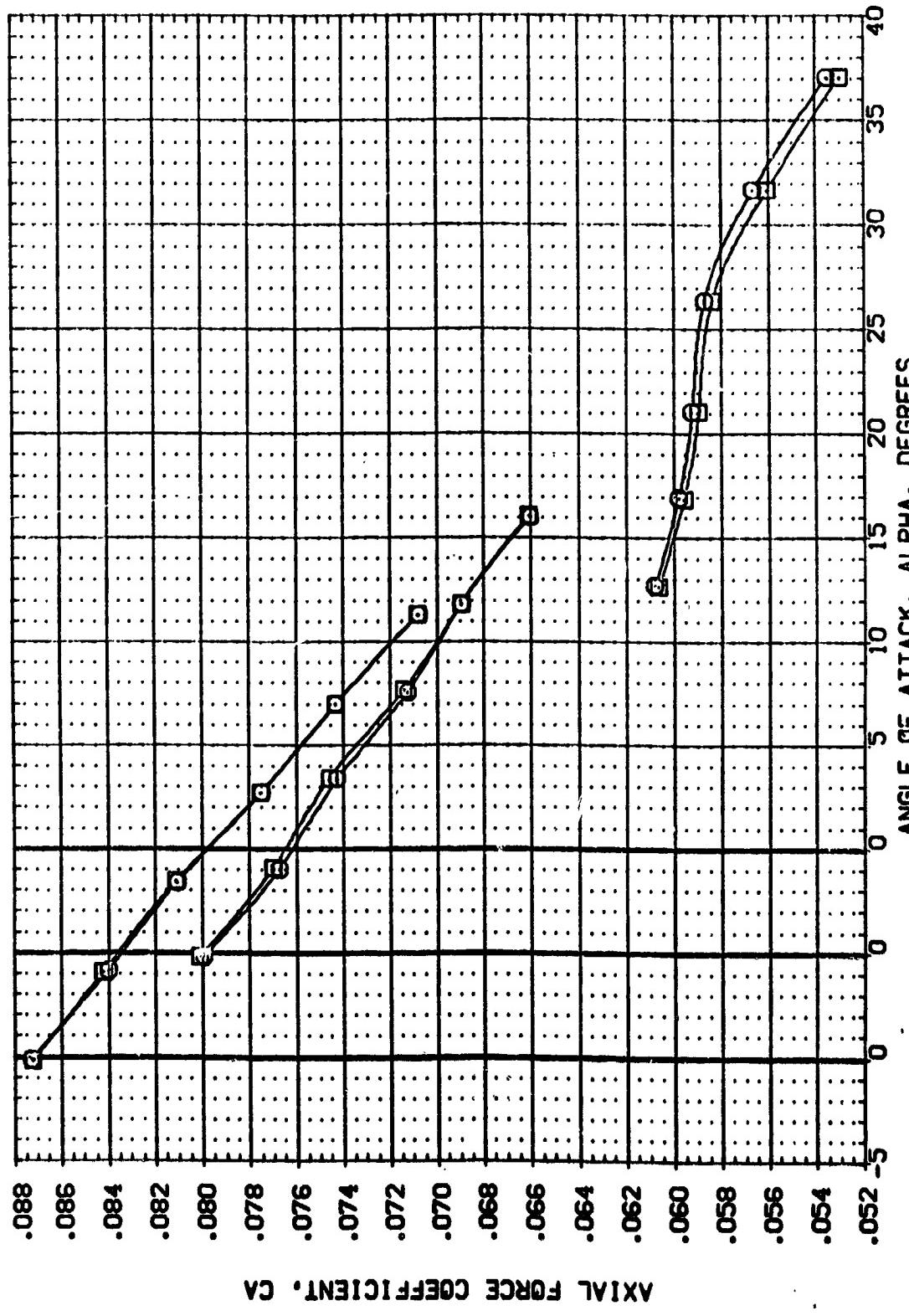
REFERENCE INFORMATION	
SREF	.7245 SO. FT.
LREF	7.8828 INCHES
BREF	15.1152 INCHES
XMRP	12.9510 INCHES
YMRP	0.0000 INCHES
ZMRP	6.0000 INCHES
SCALE	.0150



EFFECT OF MACH NO. ON BASIC CONFIGURATION  
 (A)MACH = 2.50 (B) 2.95 (C) 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(B7016) MA-7.UPT 1031.ROCKWELL PRR CRG. CONS.  
(B7036) MA-7.UPT 1031.ROCKWELL PRR CRG. CCRF.

REFERENCE INFORMATION  
SREF 7245 SO. FT.  
LREF 7.8828 INCHES  
BREF 15.1152 INCHES  
XREF 12.9510 INCHES  
YREF 6.0000 INCHES  
ZREF .0150 INCHES  
SCALE

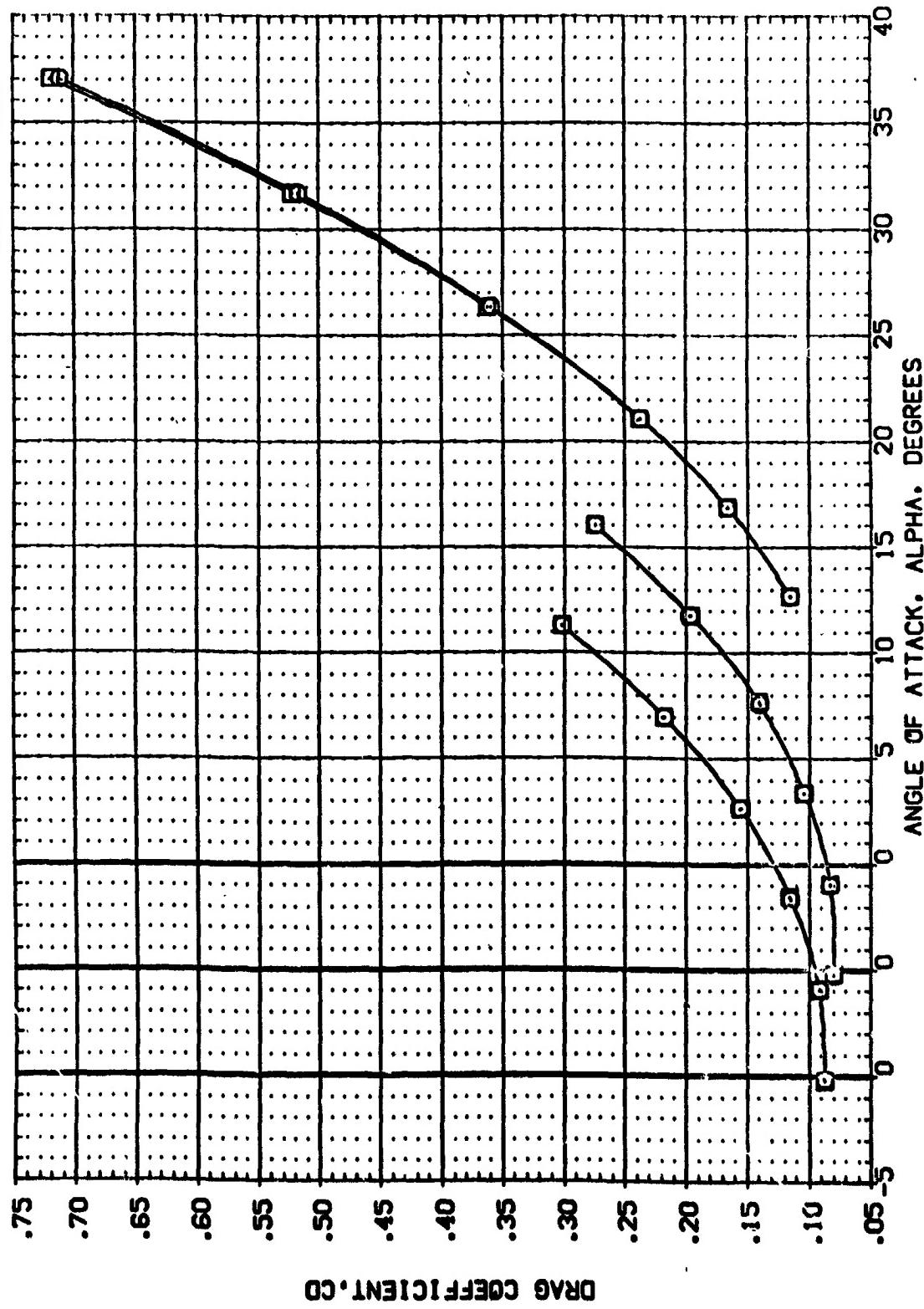


EFFECT OF MACH NO. ON BASIC CONFIGURATION  
(A)MACH = 2.50 (B) 2.95 (C) 4.00

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DATA SET NAME. CONFIGURATION DESCRIPTION  
 (BPM016) 8 MA-7. UPNT 1031.ROCKWELL PRR 248. CONF.: BYTNA  
 (BPM036) 8 MA-7. UPNT 1031.ROCKWELL PRR 248. CONF.: BYTNA

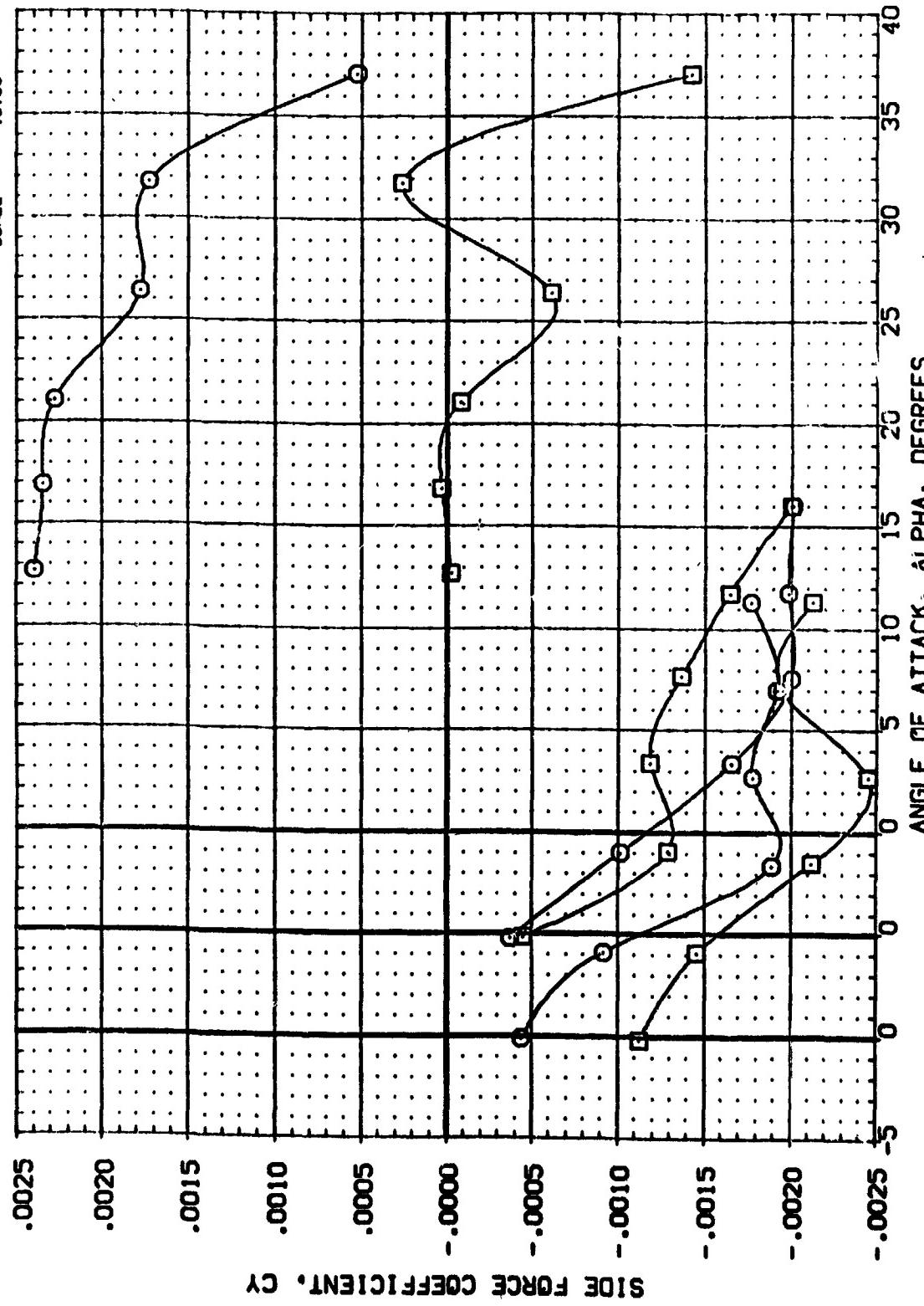
	REFERENCE INFORMATION
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LREF	7.8928 INCHES
BREF	15.1152 INCHES
XMRP	12.9510 INCHES
YMRP	.0000 INCHES
ZMRP	6.0000 INCHES
SCALE	.0150



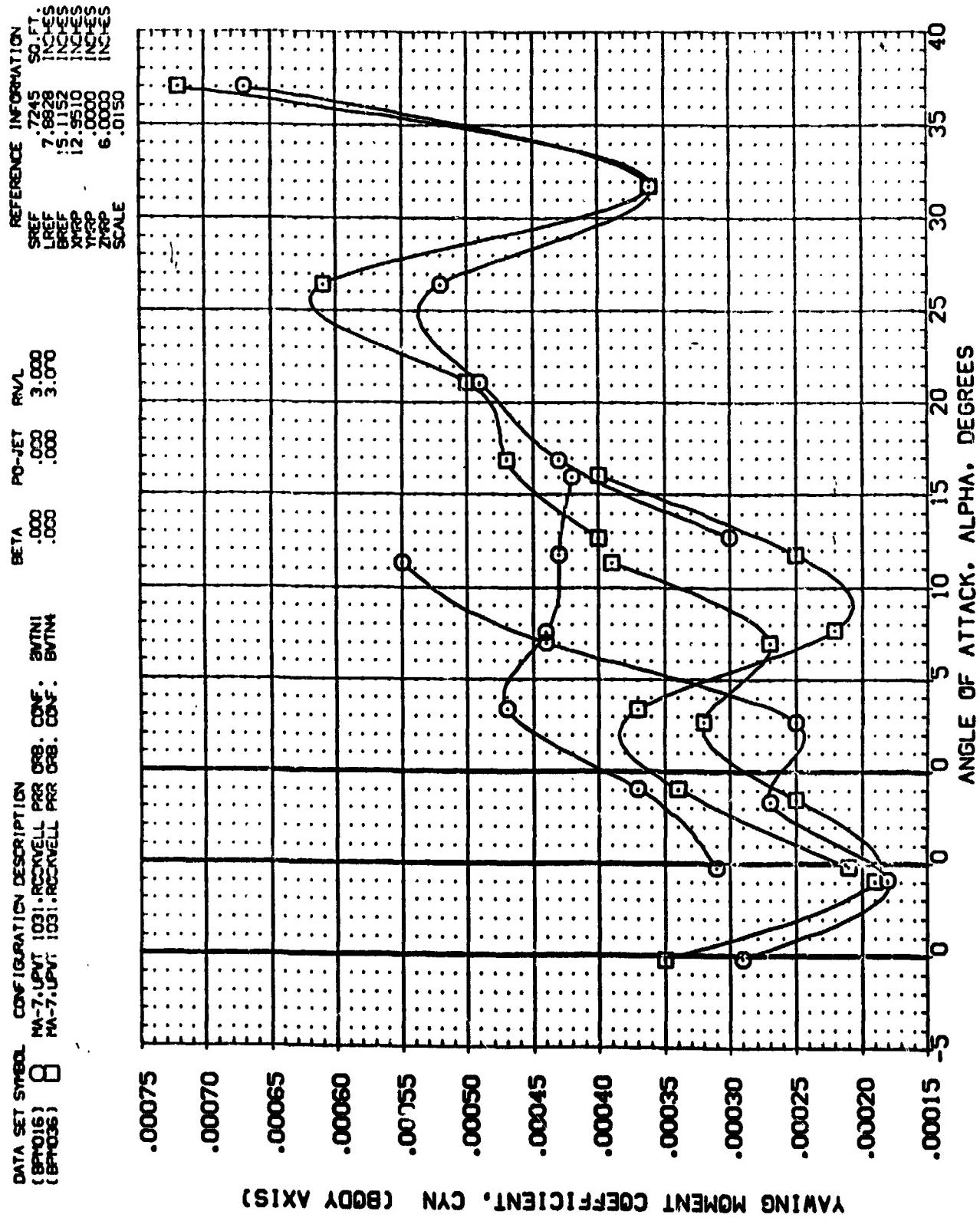
EFFECT OF MACH NO. ON BASIC CONFIGURATION  
 (A) MACH = 2.50 (B) 2.95 (C) 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 {BPC16} 8 MA-7 UPVT 1031 ROCKWELL PRR 088. CONF: BWTN1  
 {BPC16} 8 MA-7 UPVT 1031 ROCKWELL PRR 088. CONF: BWTN4

REFERENCE INFORMATION  
 SREF SO.FT:  
 LREF 7.7245 INCHES  
 RREF 7.8828 INCHES  
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 YREF 12.9510 INCHES  
 ZREF .0000 INCHES  
 SCALE .0153



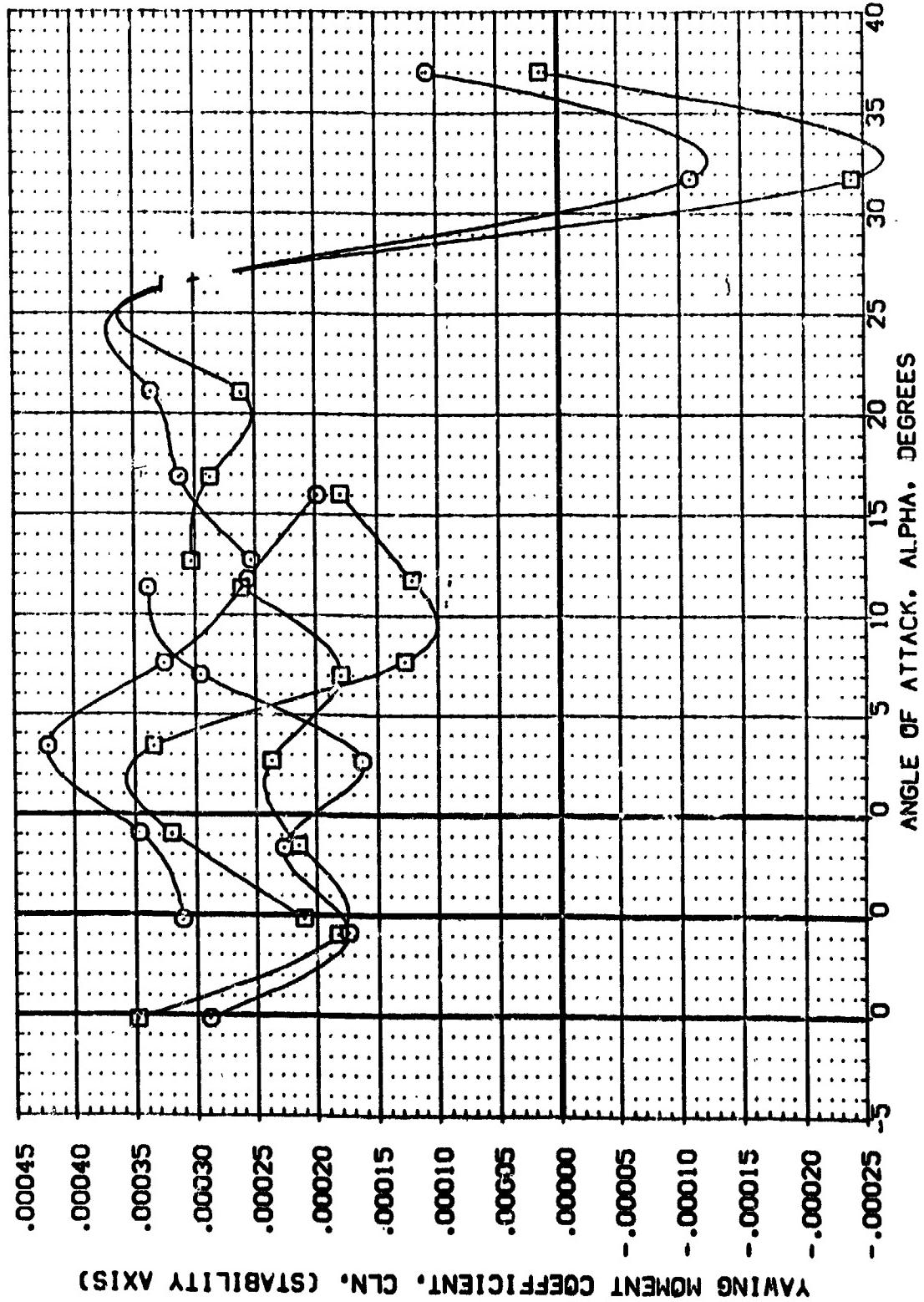
EFFECT OF MACH NO. ON BASIC CONFIGURATION  
 $\text{MACH} = 2.50 \text{ (B)} \quad 2.95 \text{ (C)} \quad 4.00$



EFFECT OF MACH NO. ON BASIC CONFIGURATION  
(A)MACH = 2.50 (B) 2.95 (C) 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
[B7016] MA-7-UPN 1031-ROCKWELL PRR ORB. CONF. BWTN1  
[B7036] MA-7-UPN 1031-ROCKWELL PRR ORB. CONF. BWTN4

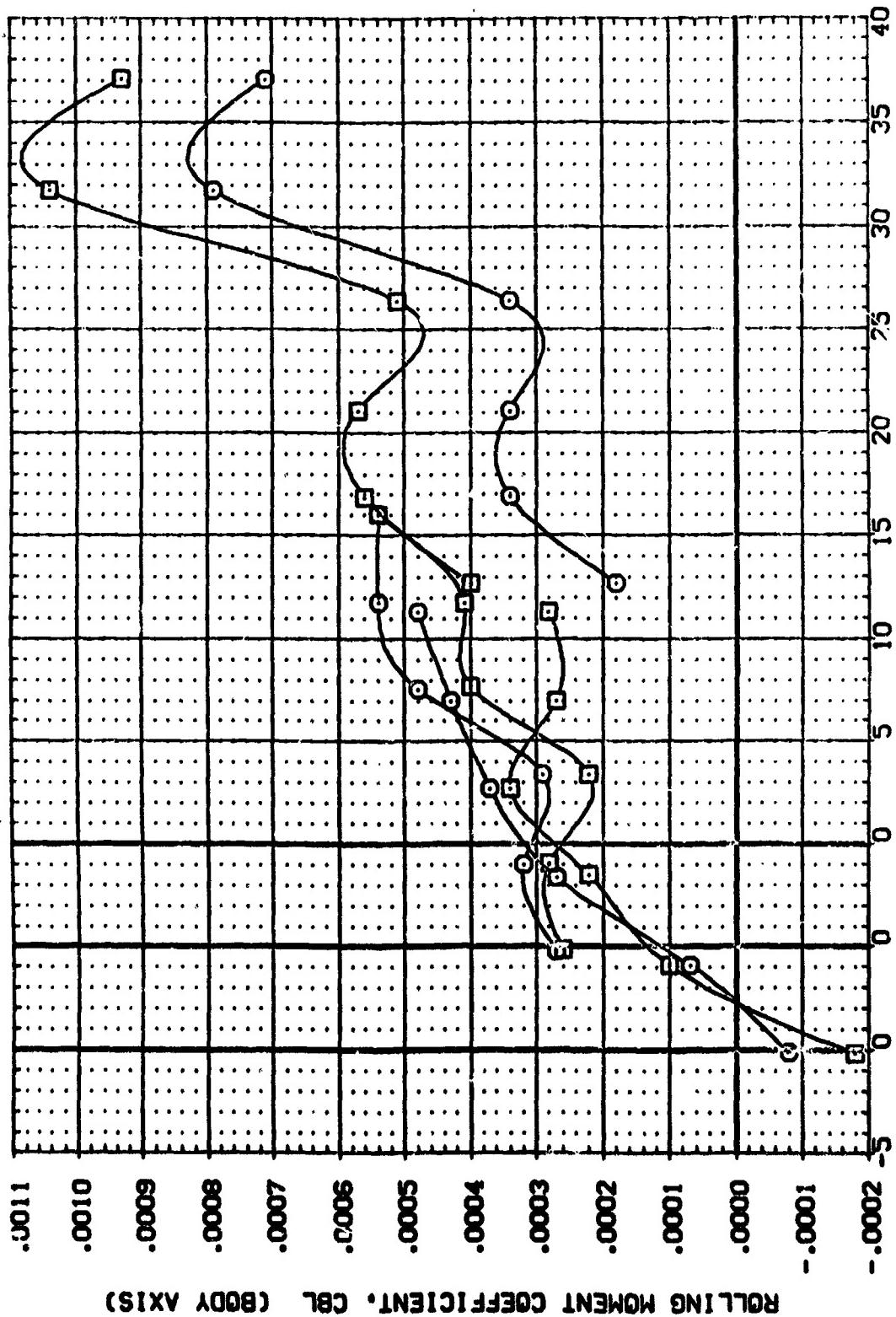
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SCF .7245 SC FT.  
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BREF 15.5652 INCHES  
XREF 12.5652 INCHES  
YREF 6.0000 INCHES  
ZREF 6.0000 INCHES  
SCALE .2500



EFFECT OF MACH NO. ON BASIC CONFIGURATION  
-  $(\Delta \text{MACH}) = 2.50 (\text{B}) 2.95 (\text{C}) 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(B)PT-C16 8 MA-7, UPN 1031, ROCKWELL PR 698. CONF: BTM14  
(B)PT-C36 0 MA-7, UPN 1031, ROCKWELL PR 698. CONF: BTM14

REFERENCE INFORMATION  
SREF .7245 SQ.FT.  
LREF 7.8828 INCHES  
BREF 15.1152 INCHES  
XRP 12.3610 INCHES  
YRP .0000 INCHES  
ZRP 6.0000 INCHES  
SCALE .0150

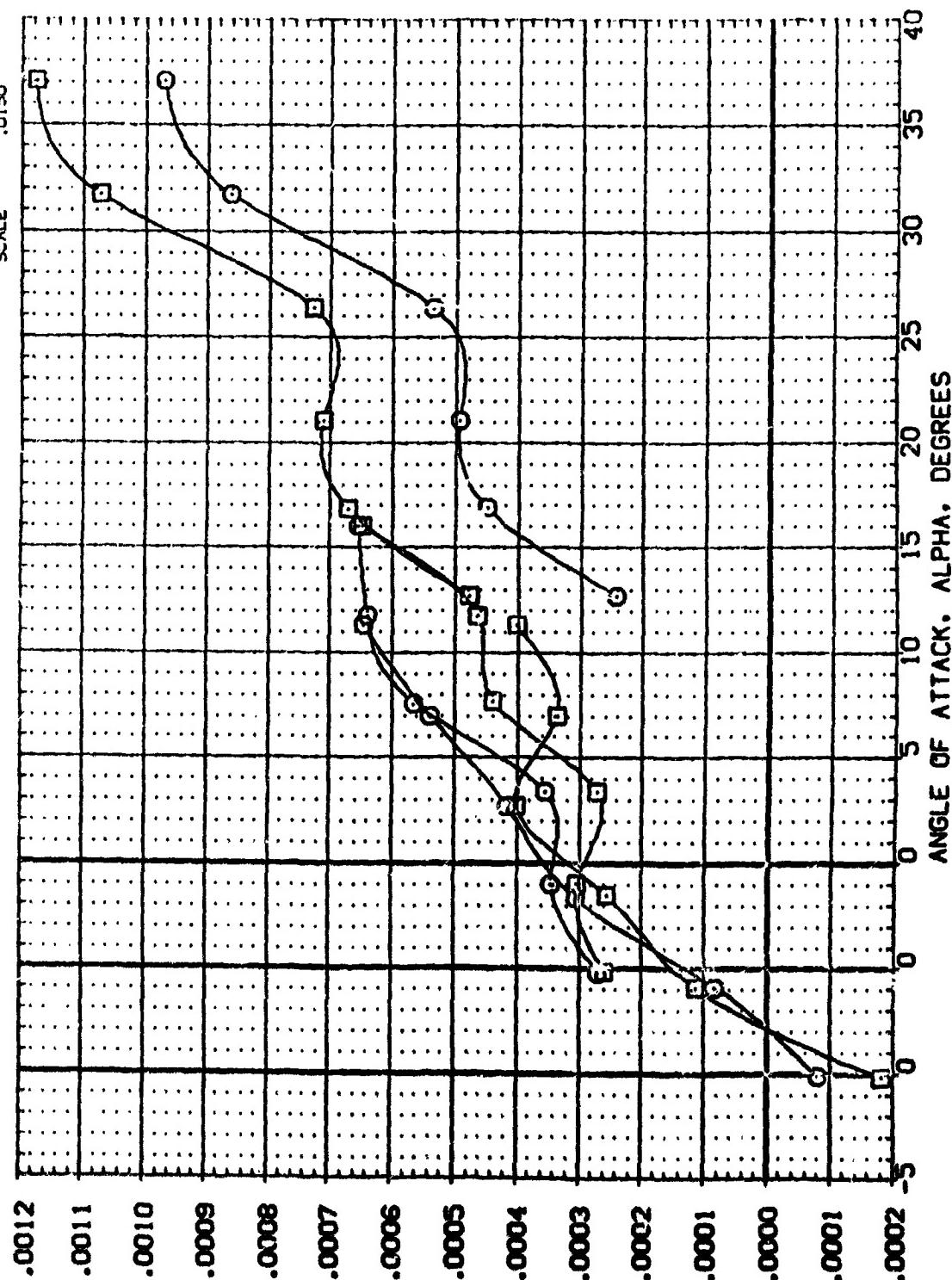


### EFFECT OF MACH NO. ON BASIC CONFIGURATION

(A)MACH = 2.50 (B) 2.95 (C) 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(BPH035) B MA-7 UPNT 1031.42001L PRR 058 CDF: CDF:  
(BPH035) B MA-7 UPNT 1031.42001R PRR 058 CDF: CDF:

REFERENCE INFORMATION  
SREF 7.225 SCAL.  
REF 7.8838  
XREF 15.1152  
YREF 12.9510  
ZREF 6.0000  
SCALE 0.0150

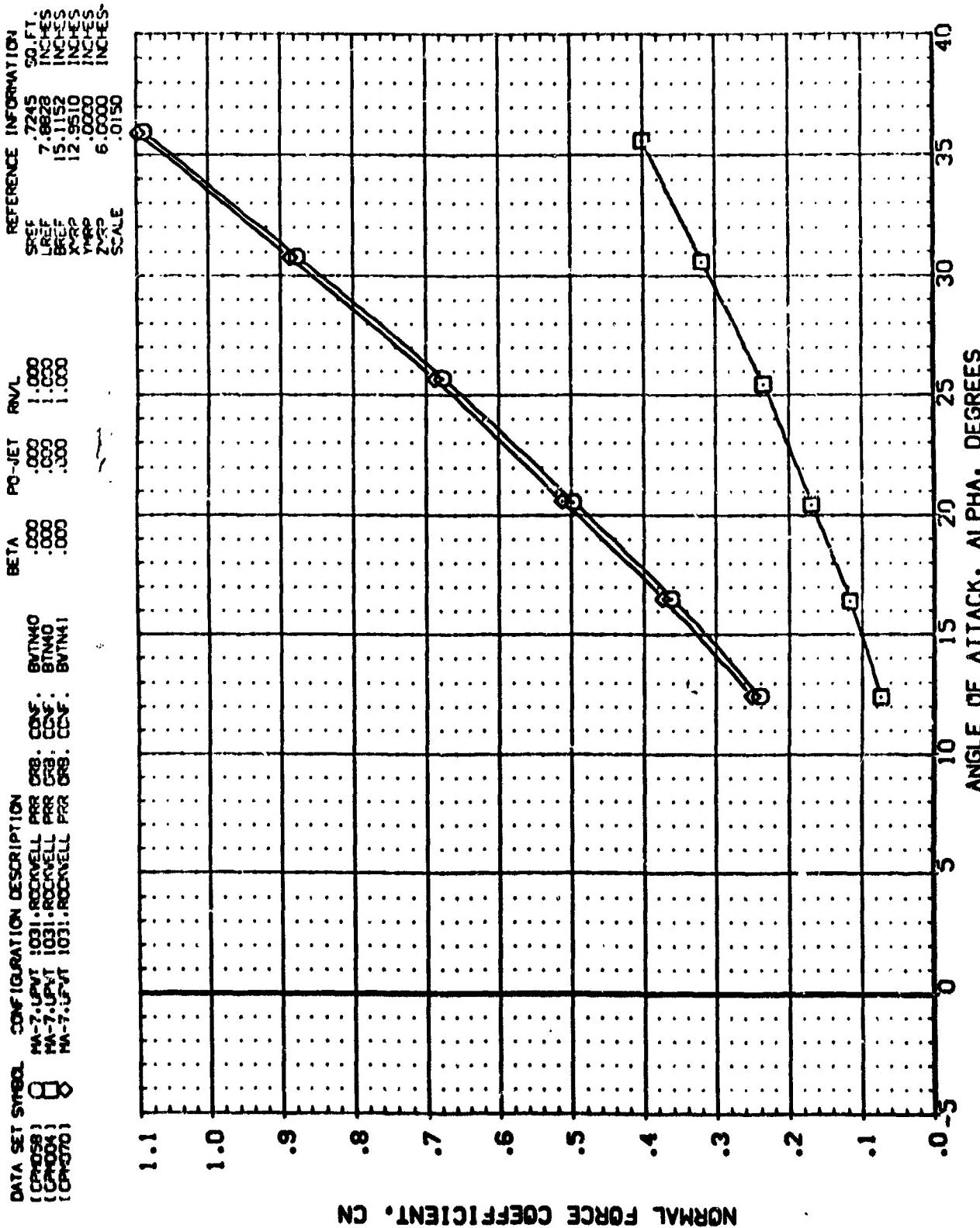


ROLLING MOMENT COEFFICIENT, CRL, (STABILITY AXIS)

EFFECT OF MACH NO. ON BASIC CONFIGURATION  
MACH = 2.50 (B) 2.95 (C) 4.00

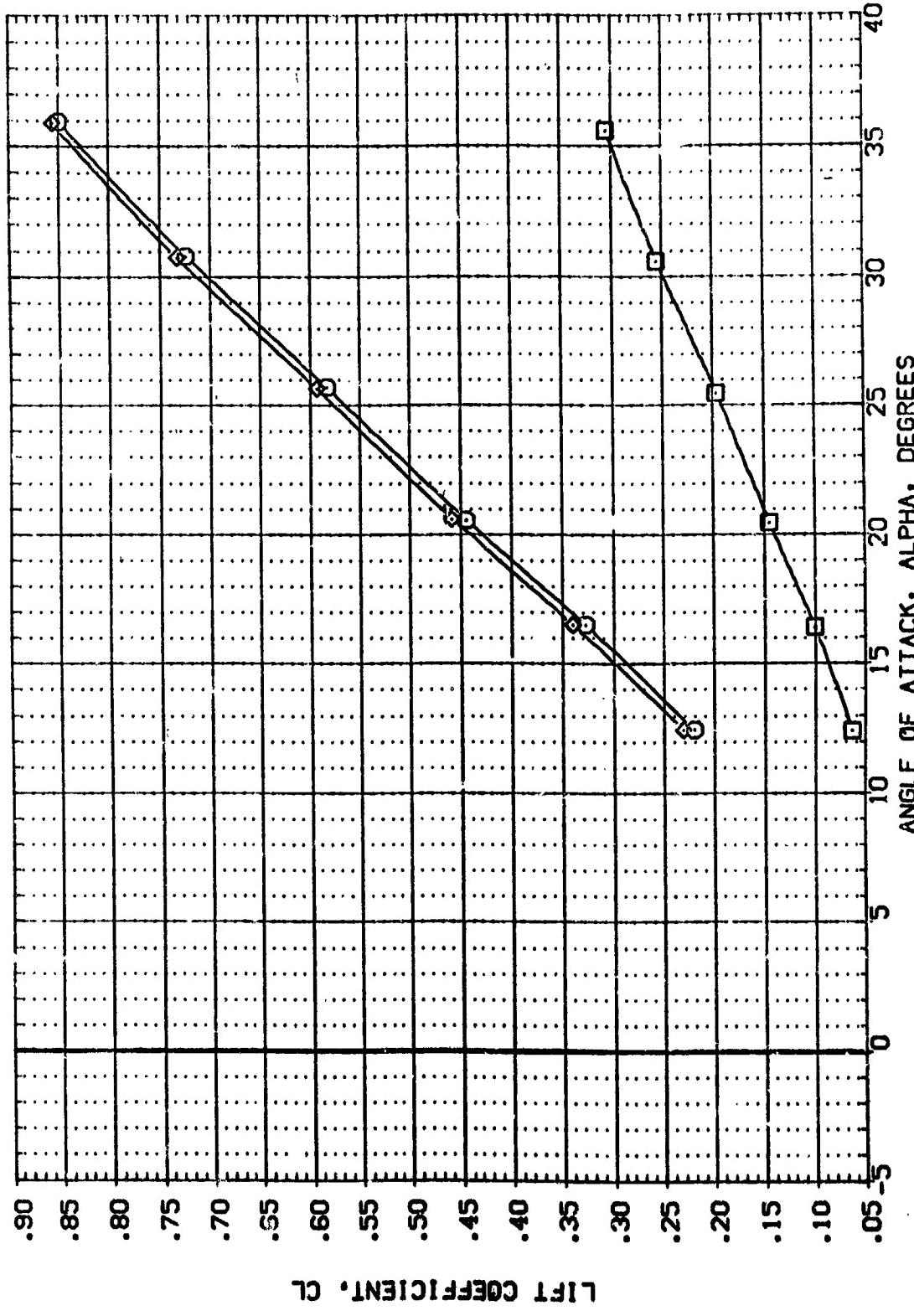
EFFECT OF WING  
 (MACH = 4.00)

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CONF-8) MA-7. UPVT 103! ROCKWELL PRR ORB.  
 (CONF-4) MA-7. UPVT 103! ROCKWELL PRR ORB.  
 (CONF-0) MA-7. UPVT 103! ROCKWELL PRR ORB.

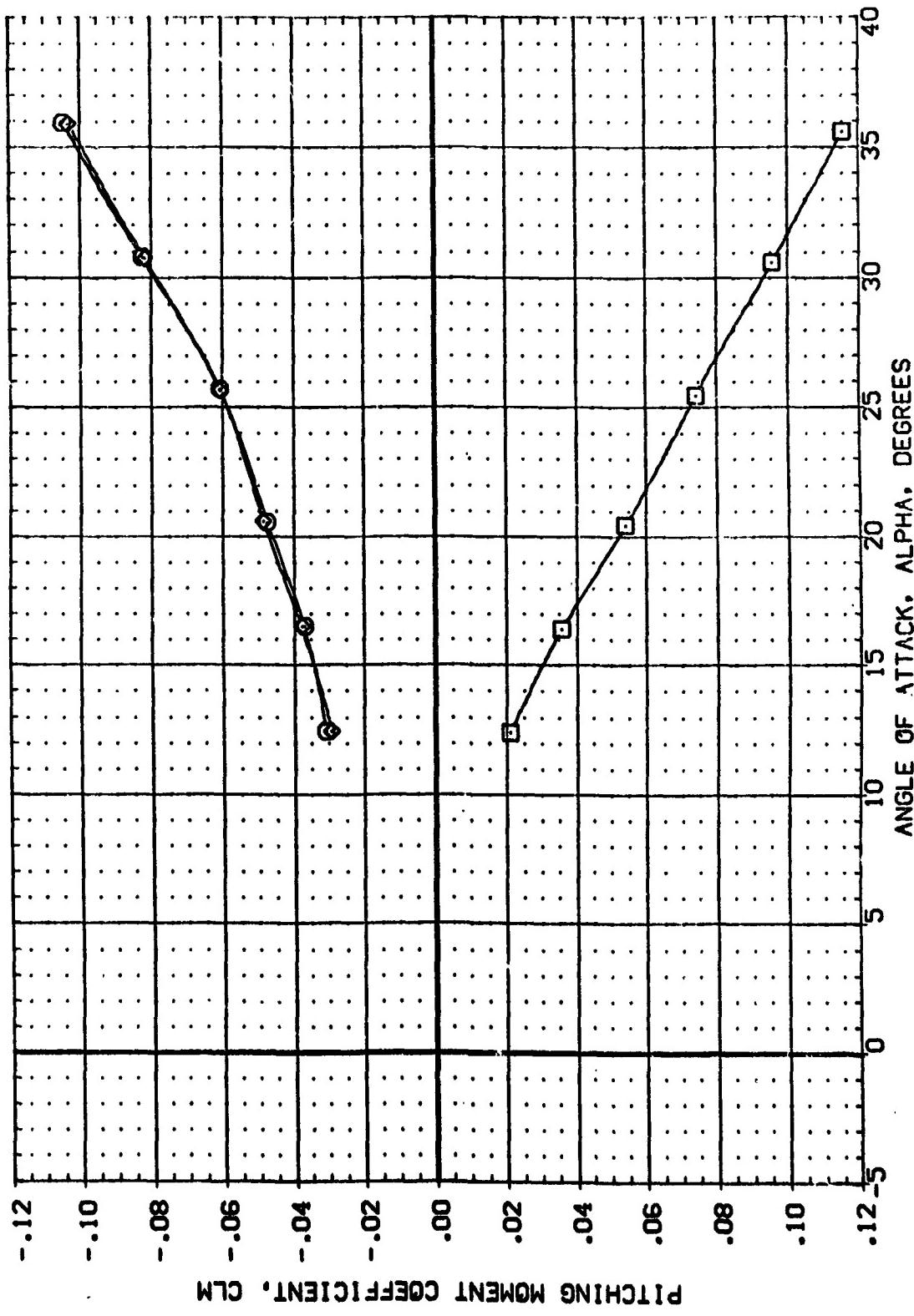
REFERENCE INFORMATION  
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 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0150 INCHES  
 SCALE .0150



EFFECT OF WING  
 (MACH = 4.00)

DATA SET NAME: CONFIGURATION DESCRIPTION  
 (CPM058) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BTM140  
 (CPM064) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BTM140  
 (CPM070) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BTM141

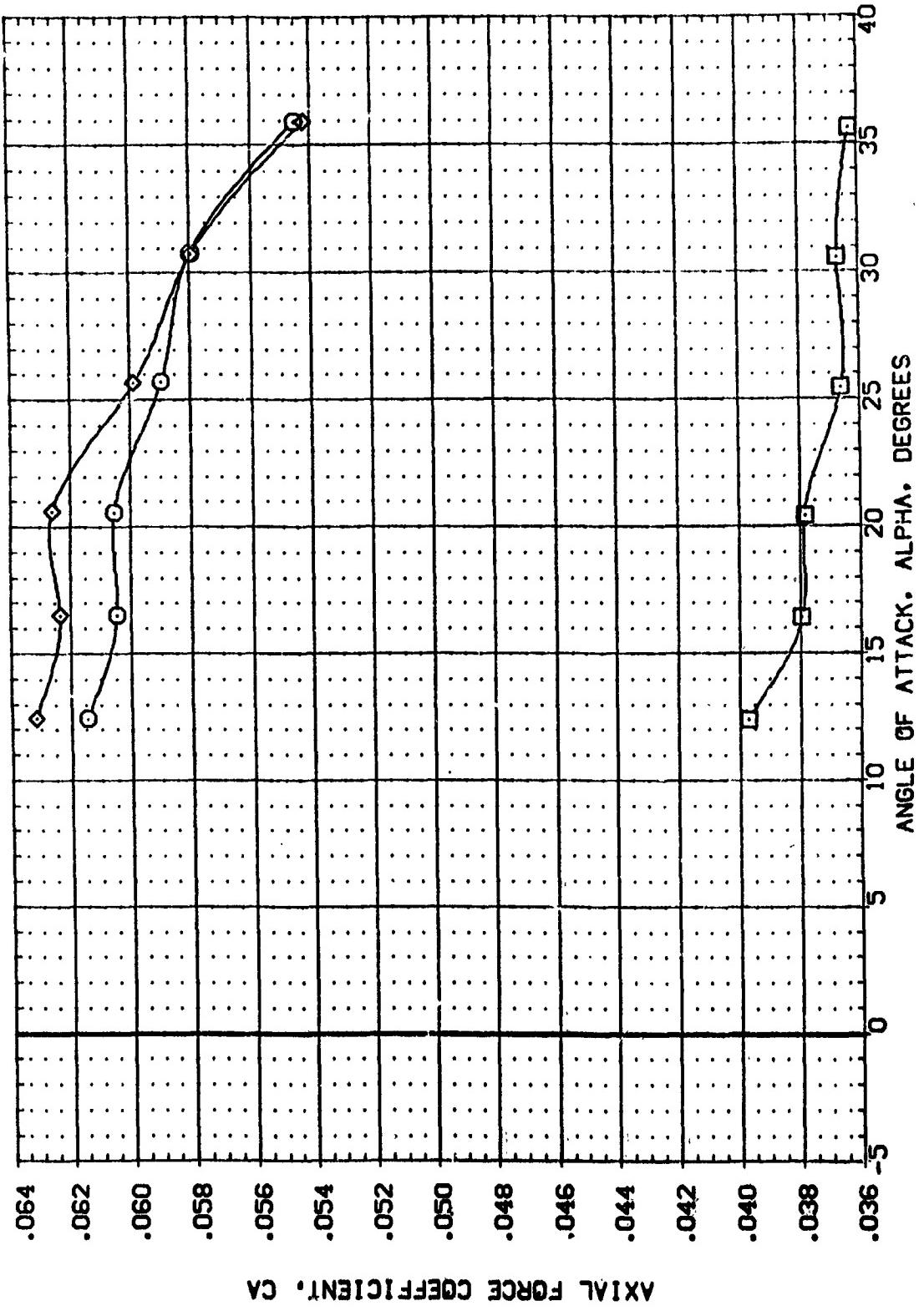
REFERENCE INFORMATION  
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 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9515 INCHES  
 YMRP .0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150



EFFECT OF WING  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP058) MA-7.UPT 1031.ROCKWELL PRR GR8. CONF: BN1N40  
 (CP004) MA-7.UPT 1031.ROCKWELL PRR GR8. CONF: BN1N41  
 (CP070) MA-7.UPT 1031.ROCKWELL PRR GR8. CONF: BN1N41

REFERENCE INFORMATION  
 SREF .7245 SG:ST.  
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 BREF 15.1152 INCHES  
 XMRP 12.9513 INCHES  
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 ZMRP .0150  
 SCALE

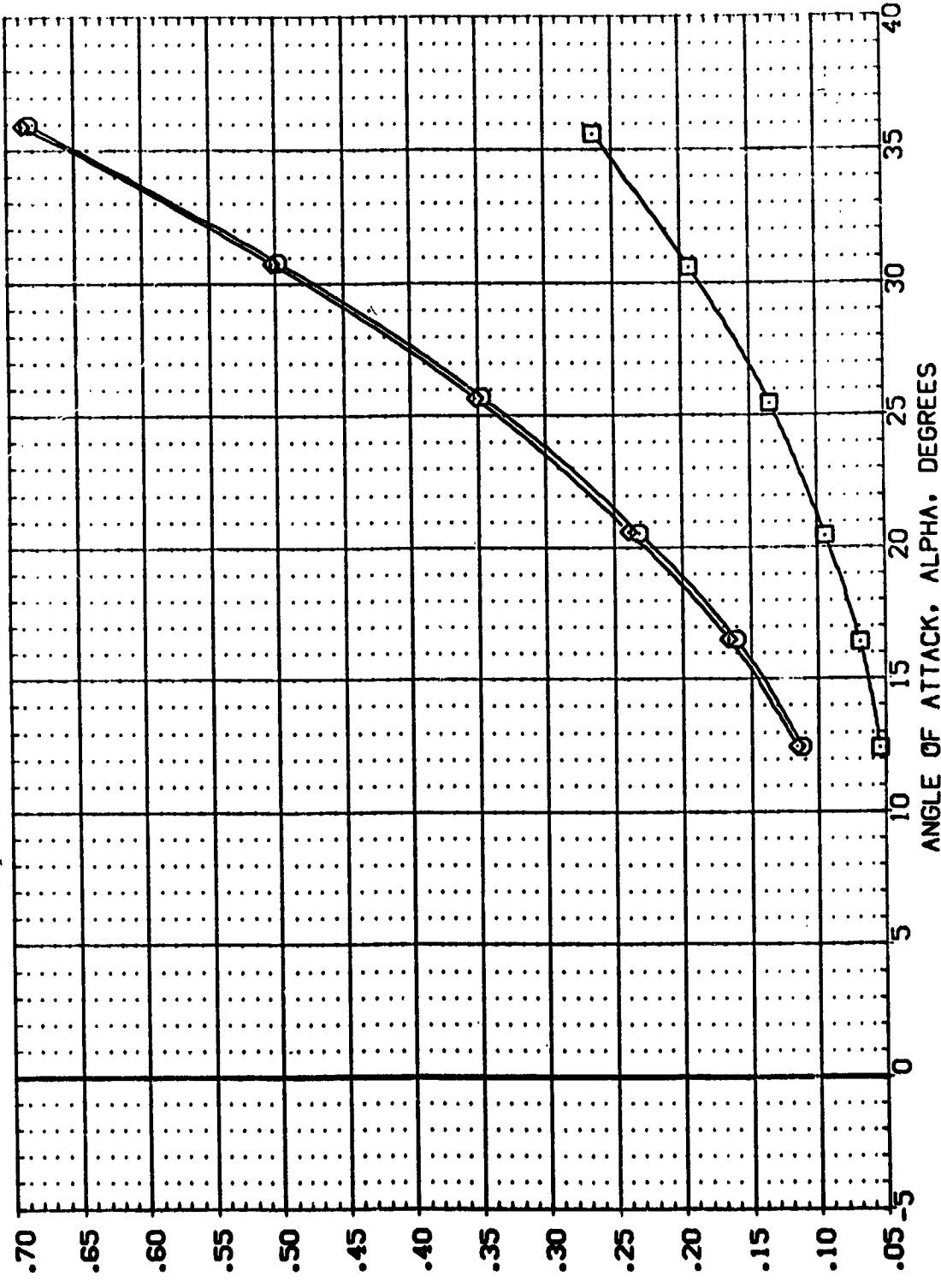


EFFECT OF WING  
 $C_{A,MACH} = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CROSS) MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF. BTM140  
 (OPEN) MA-7, UPT 1031, ROCKWELL PRR GRB. CONF. BTM140  
 (OPEN) MA-7, UPT 1031, ROCKWELL PRR GRB. CONF. BTM141

## REFERENCE INFORMATION

	INCHES	INCHES
SREF	.7245	.96 FT.
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BREF	15.1152	
XHPP	12.1610	
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SCALE	.05:150	

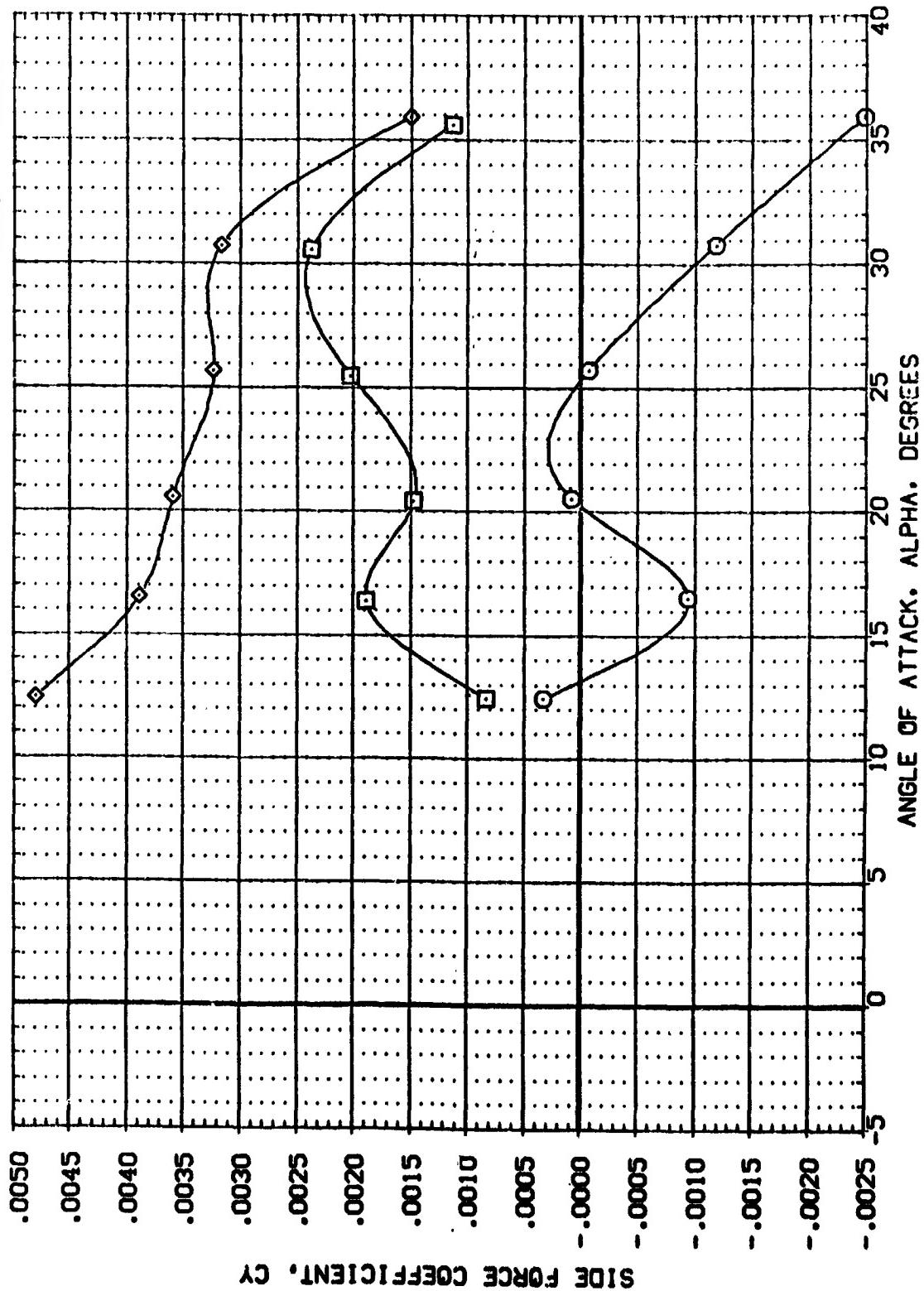


DRAG COEFFICIENT, CD

EFFECT OF WING  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CPD58) MA-7, UPVT 1031, ROCKWELL PRR CRB. CONF.: BVN40  
 (CPH04) MA-7, UPVT 1031, ROCKWELL PRR CRB. CONF.: BVN41  
 (CPH70) MA-7, UPVT 1031, ROCKWELL PRR CRB. CONF.: BVN41

REFERENCE INFORMATION  
 SPREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF .3000 INCHES  
 ZREF 5.0000 INCHES  
 SCALE .0150



EFFECT OF WING  
 $(\Delta MACH = 4.00)$

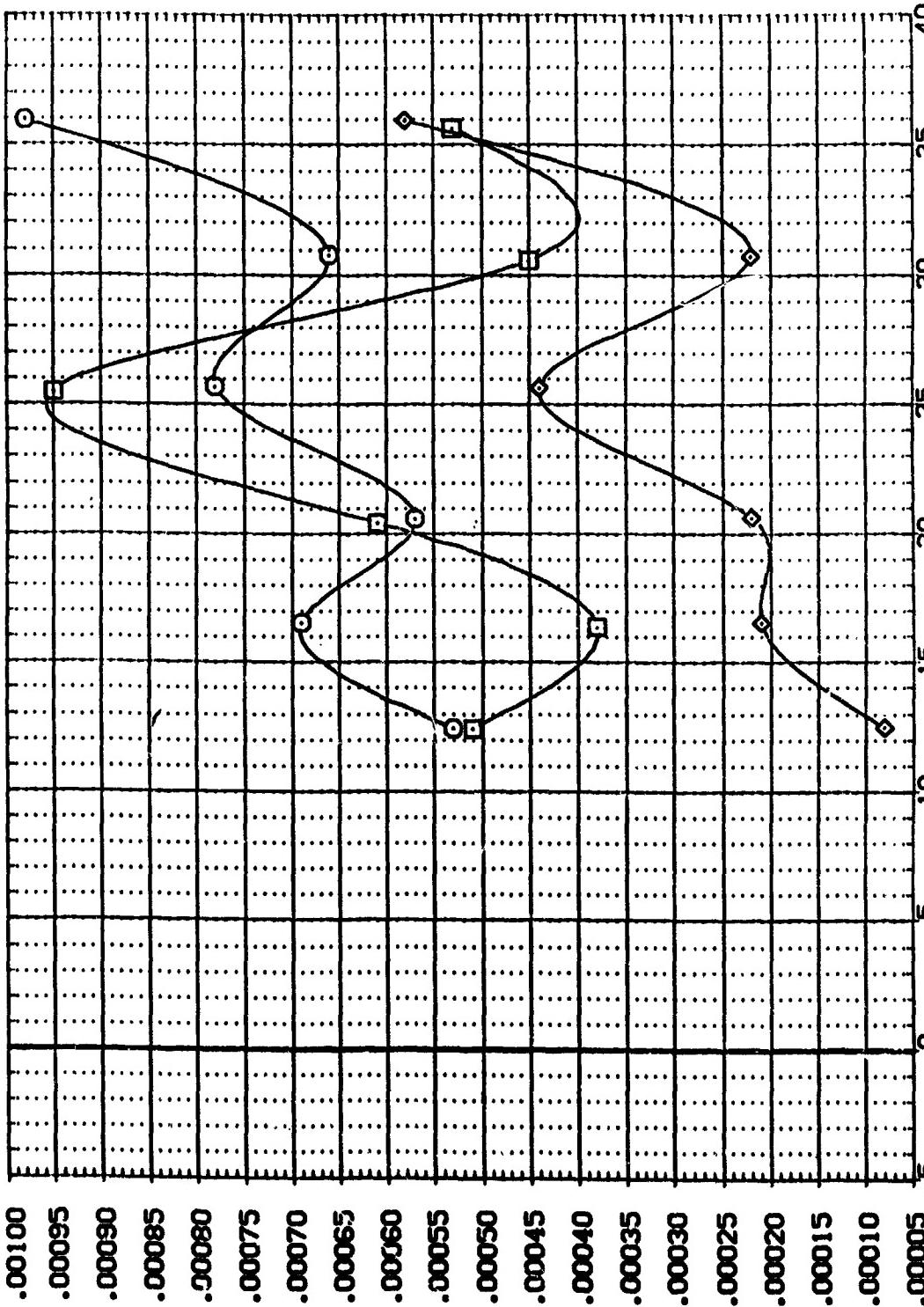
EFFECT OF WING  
 $(\Delta MACH) = 4.00$

ANGLE OF ATTACK, ALPHA, DEGREES

-5 0 5 10 15 20 25 30 35 40

Y

AWING MOMENT COEFFICIENT, CYN (BODY AXIS)

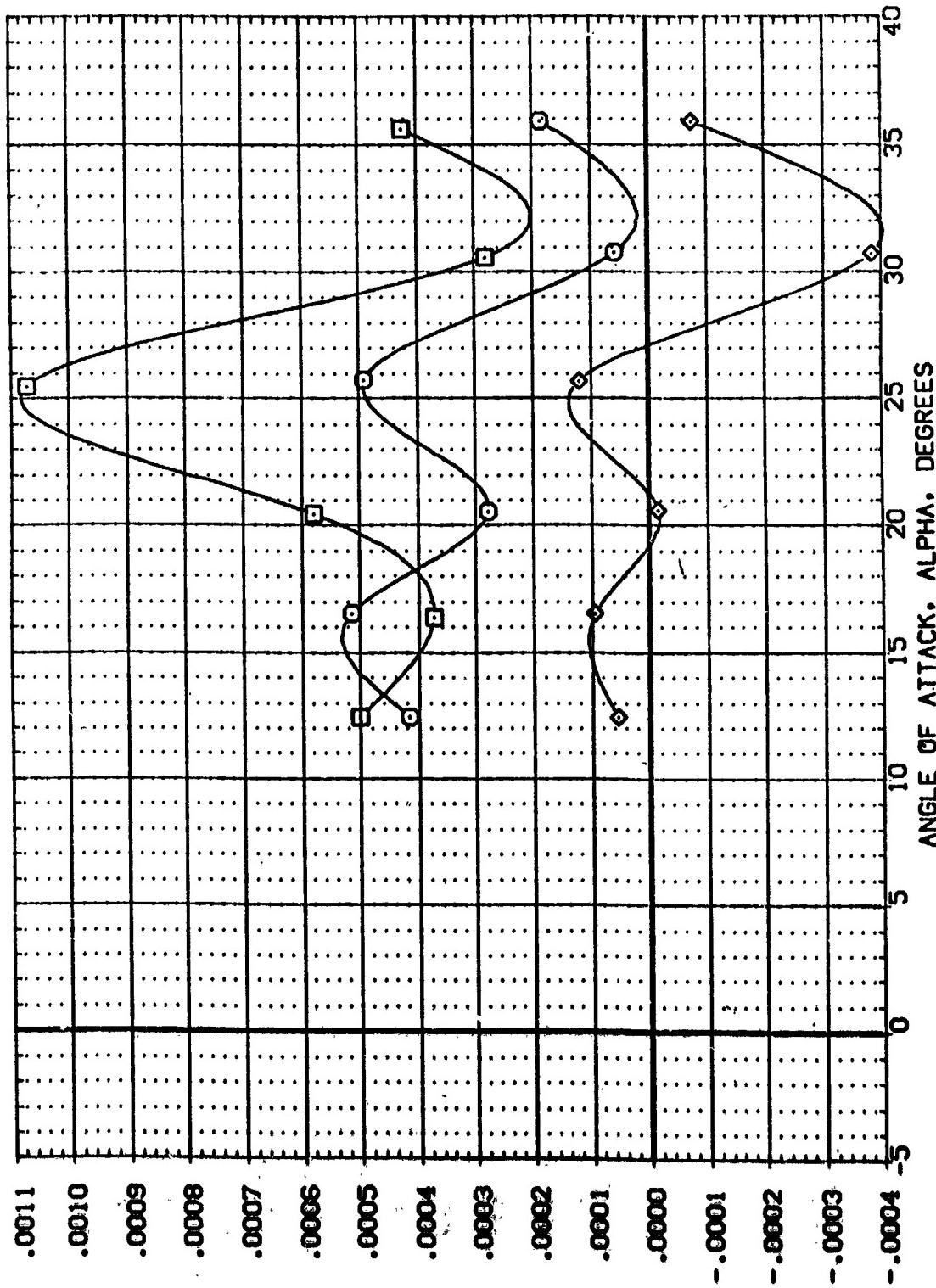


DATA SET NUMBER CONFIGURATION DESCRIPTION  
 (CROSSBAR) MA-7, LEFT 103.1, ROCKWELL PRR OBS. CONF. BNTM40  
 (CROSSBAR) MA-7, LEFT 103.1, ROCKWELL PRR OBS. CONF. BNTM41  
 (CROSSBAR) MA-7, LEFT 103.1, ROCKWELL PRR OBS. CONF. BNTM42  
 (CROSSBAR) MA-7, LEFT 103.1, ROCKWELL PRR OBS. CONF. BNTM43

REFERENCE INFORMATION  
 SREF 7.7245 SD FT.  
 LREF 7.8872 INCHES  
 BREF 15.1152 INCHES  
 XTRP 12.9510 INCHES  
 YTRP 6.0550 INCHES  
 ZTRP 0.0550 INCHES  
 SCALE

DATA SET SOURCE: CONFIGURATION DESCRIPTION  
 (CROSS) MA-7, UPNT 1031; ROCKWELL  
 (SQUARE) MA-7, UPNT 1031; ROCKWELL  
 (OPEN CIRCLE) MA-7, UPNT 1031; ROCKWELL

REFERENCE INFORMATION  
 SREF .7245 SO. FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XRP 12.9510 INCHES  
 YRP 6.0000 INCHES  
 ZRP .0150 INCHES  
 SCALE



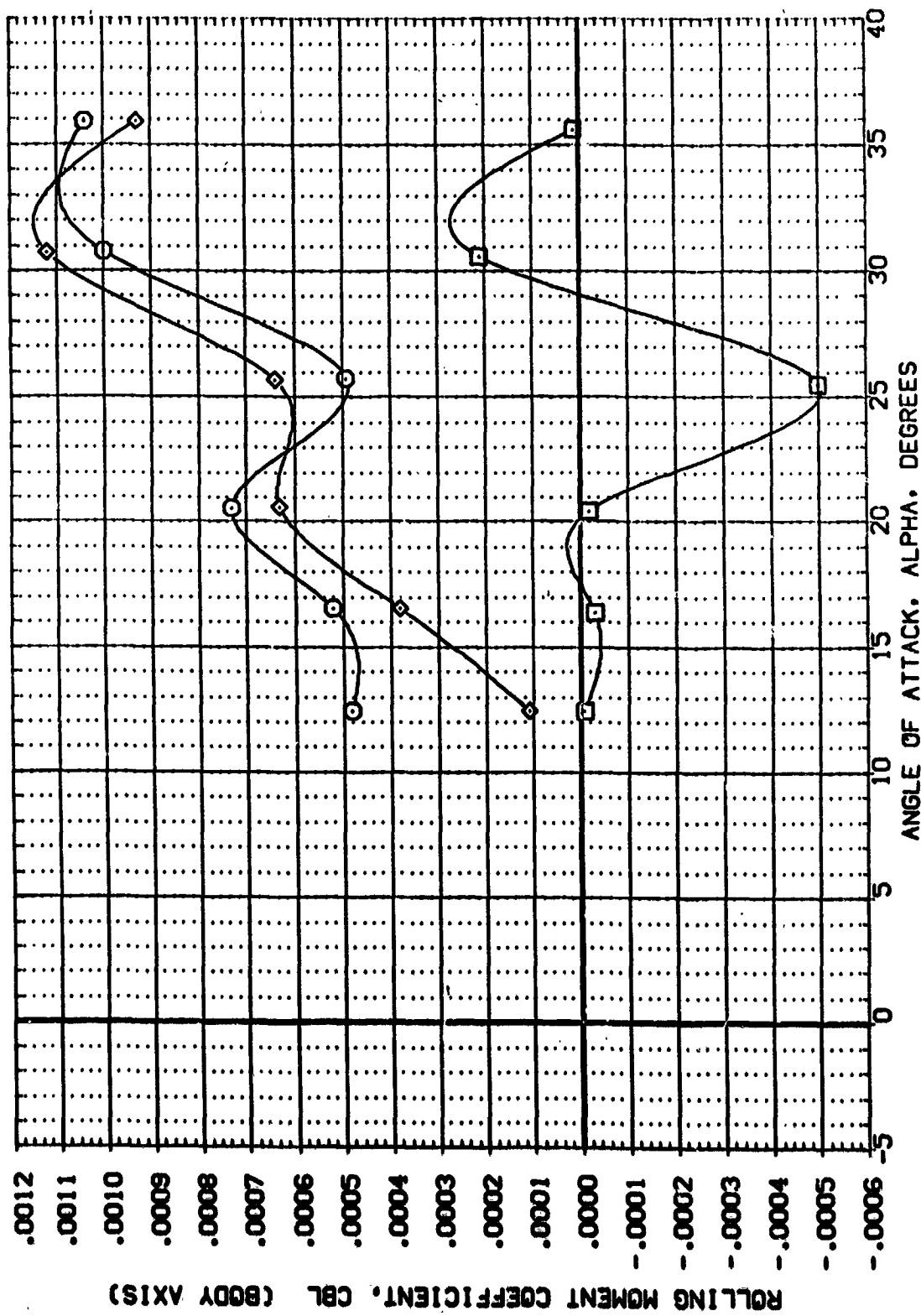
YAWING MOMENT COEFFICIENT, CLN, (STABILITY AXIS)

EFFECT OF WING  
 CRITICAL = 4.00

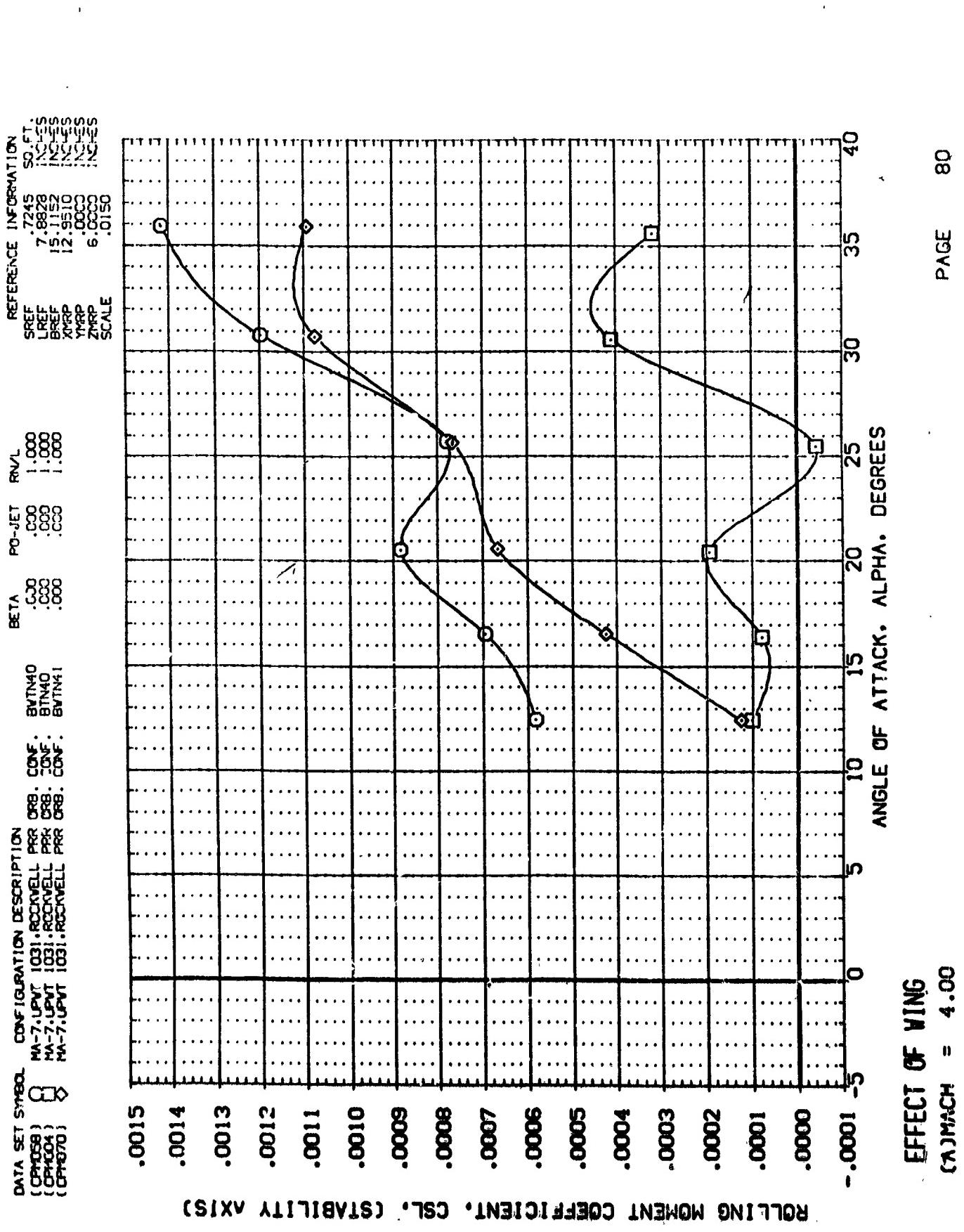
DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CONF03)	MA-7.5PNT 1031. ROCKWELL PRR
(CONF04)	MA-7.5PNT 1031. ROCKWELL PRR
(CONF05)	MA-7.5PNT 1031. ROCKWELL PRR

REFERENCE INFORMATION  
 SRF : 7.245 SC. FT.  
 LRE : 7.8128 INCHES  
 BREF : 15.1152 INCHES  
 XMRP : 12.9610 INCHES  
 YMRP : 6.0000 INCHES  
 ZMRP : 6.0000 INCHES  
 SCALE : .0150



EFFECT OF WING  
 CAIMACH = 4.00



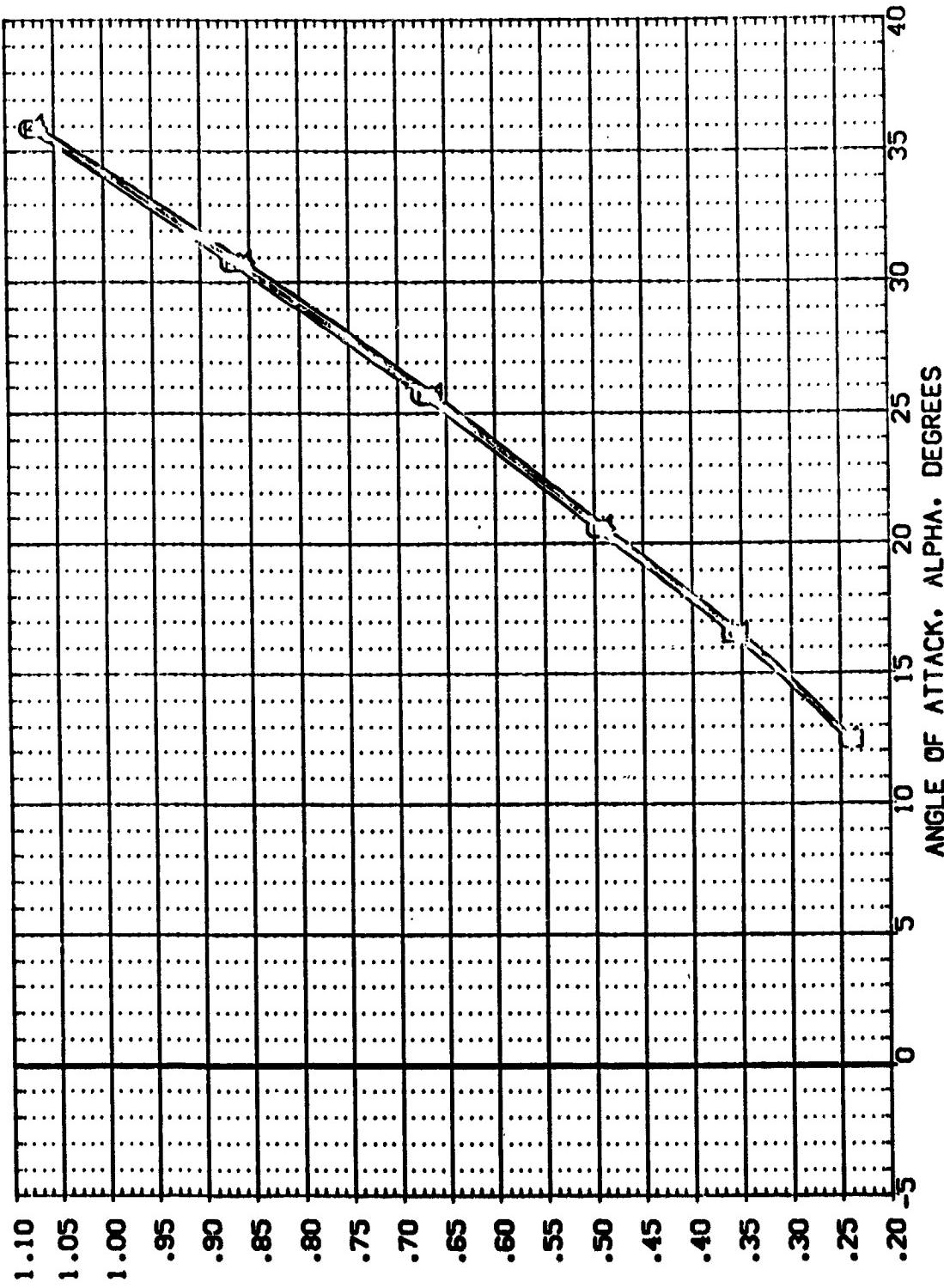
PAGE 80

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CP421)	□	NA-7, UPNT	1001	ROCKWELL	PWR	GB.	CDF.
(CP426)	○	NA-7, UPNT	1001	ROCKWELL	PWR	GB.	CDF.
(CP429)	×	NA-7, UPNT	1001	ROCKWELL	PWR	GB.	CDF.
(CP430)	△	NA-7, UPNT	1001	ROCKWELL	PWR	GB.	CDF.
(CP435)	△	NA-7, UPNT	1001	ROCKWELL	PWR	GB.	CDF.

REFERENCE INFORMATION

SREF	.7245	SO. FT.
LREF	7.8928	INCHES
BREF	15.1152	INCHES
X-CP	12.6510	INCHES
Y-CP	6.0000	INCHES
Z-CP	.0150	SCALE



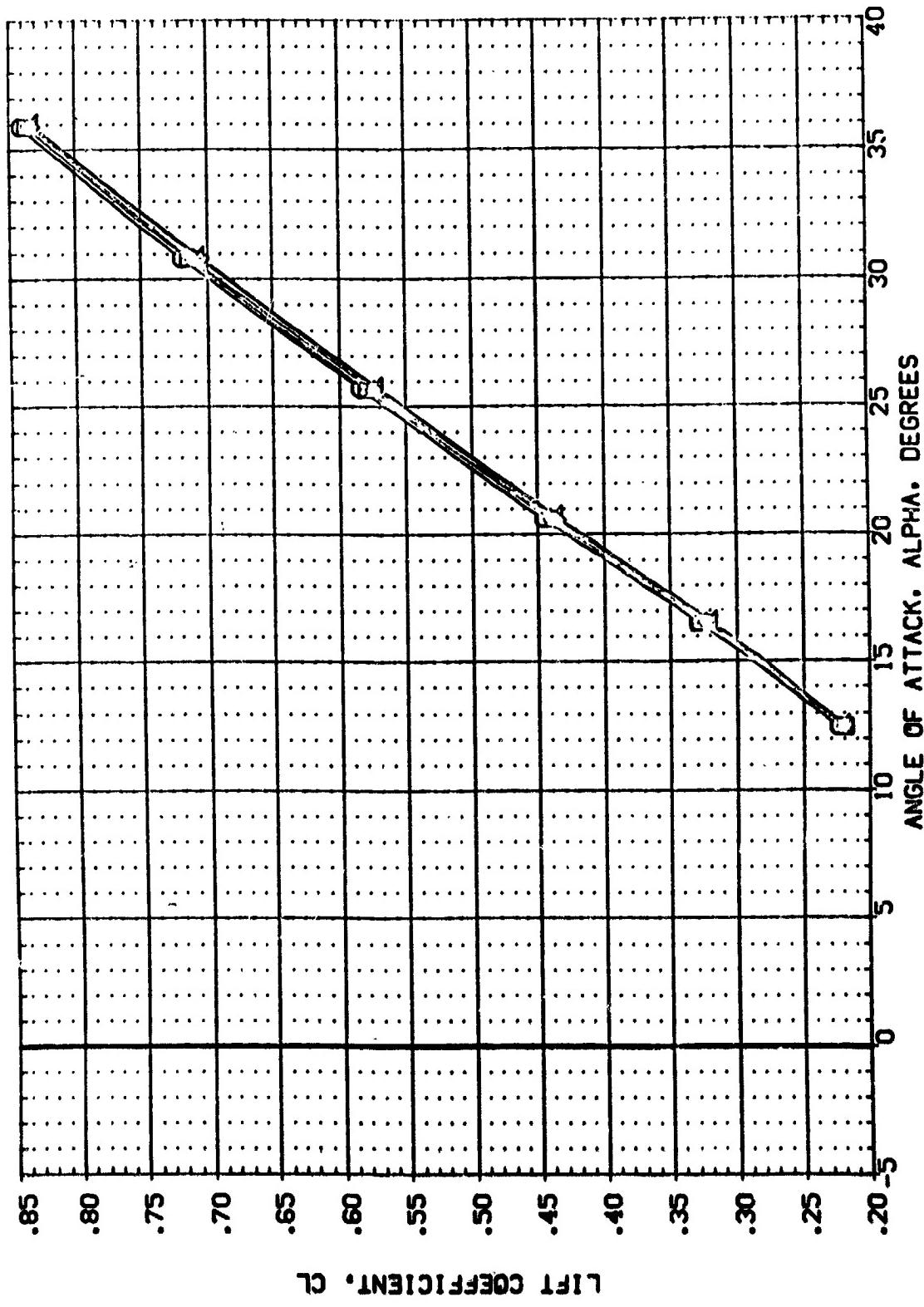
NORMAL FORCE COEFFICIENT, CN

EFFECT OF YAW NOZZLE PRESSURE  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CPH021)	□	MA-7 UPNT	1031	ROCKWELL	PAR	CRB.	CONF:	BVTN!
(CPH026)	○	MA-7 UPNT	1031	ROCKWELL	PAR	CRB.	CONF:	BVTN!
(CPH028)	×	MA-7 UPNT	1031	ROCKWELL	PAR	CRB.	CONF:	BVTN!
(CPH030)	△	MA-7 UPNT	1031	ROCKWELL	PAR	CRB.	CONF:	BVTN!
(CPH035)	▲	MA-7 UPNT	1031	ROCKWELL	PAR	CRB.	CONF:	BVTN!

REFERENCE INFORMATION  
 SREF .7245 SC. FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0150 INCHES  
 SCALE

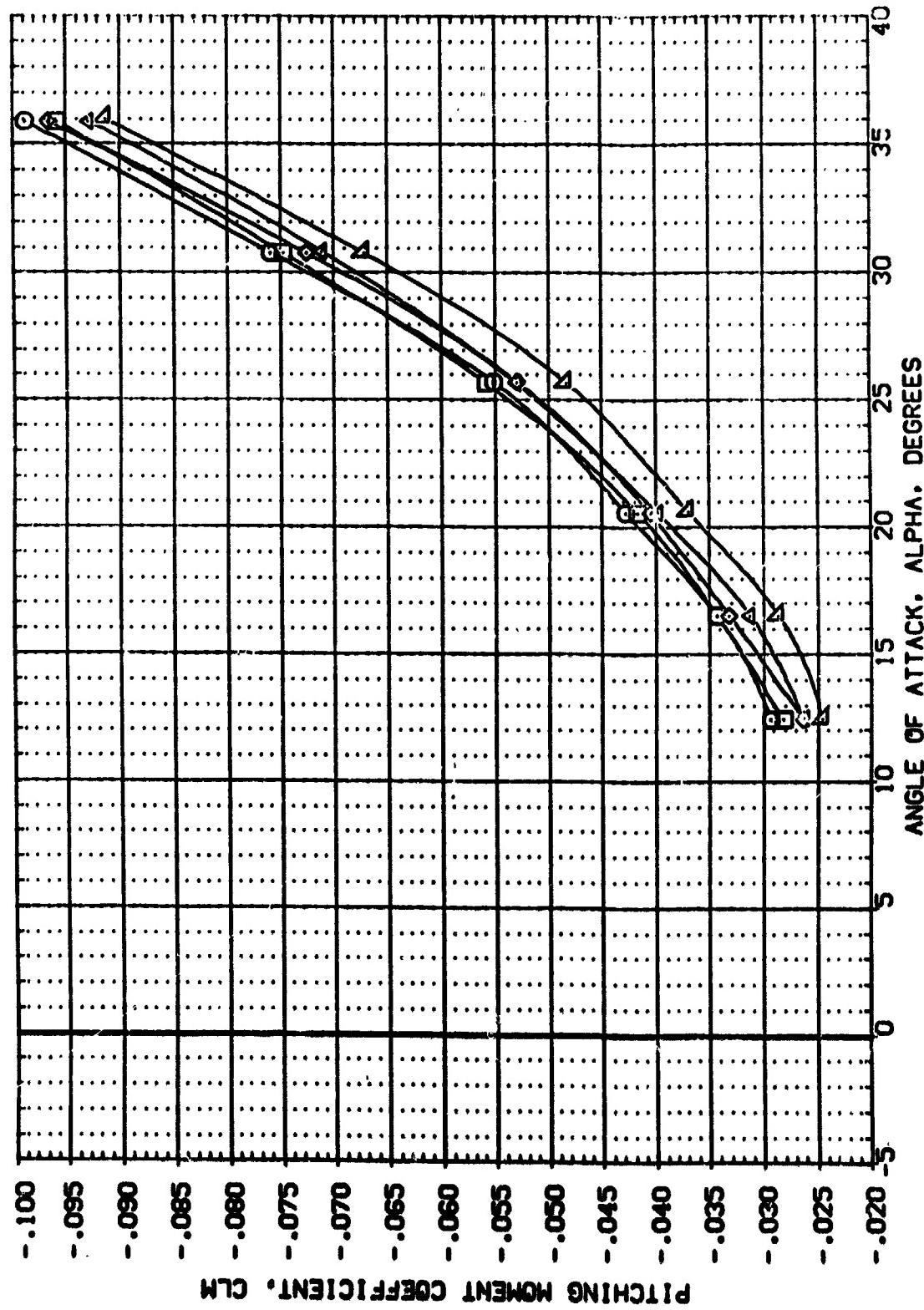


EFFECT OF YAW NOZZLE PRESSURE  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(O)	MA-7, UPN
(X)	MA-7, UPN
(△)	MA-7, UPN
(□)	MA-7, UPN
(△)	MA-7, UPN
(○)	MA-7, UPN
(X)	MA-7, UPN
(□)	MA-7, UPN

REFERENCE INFORMATION  
 SREF 7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9610 INCHES  
 YREF 6.0000 INCHES  
 ZREF .0150 SCALE



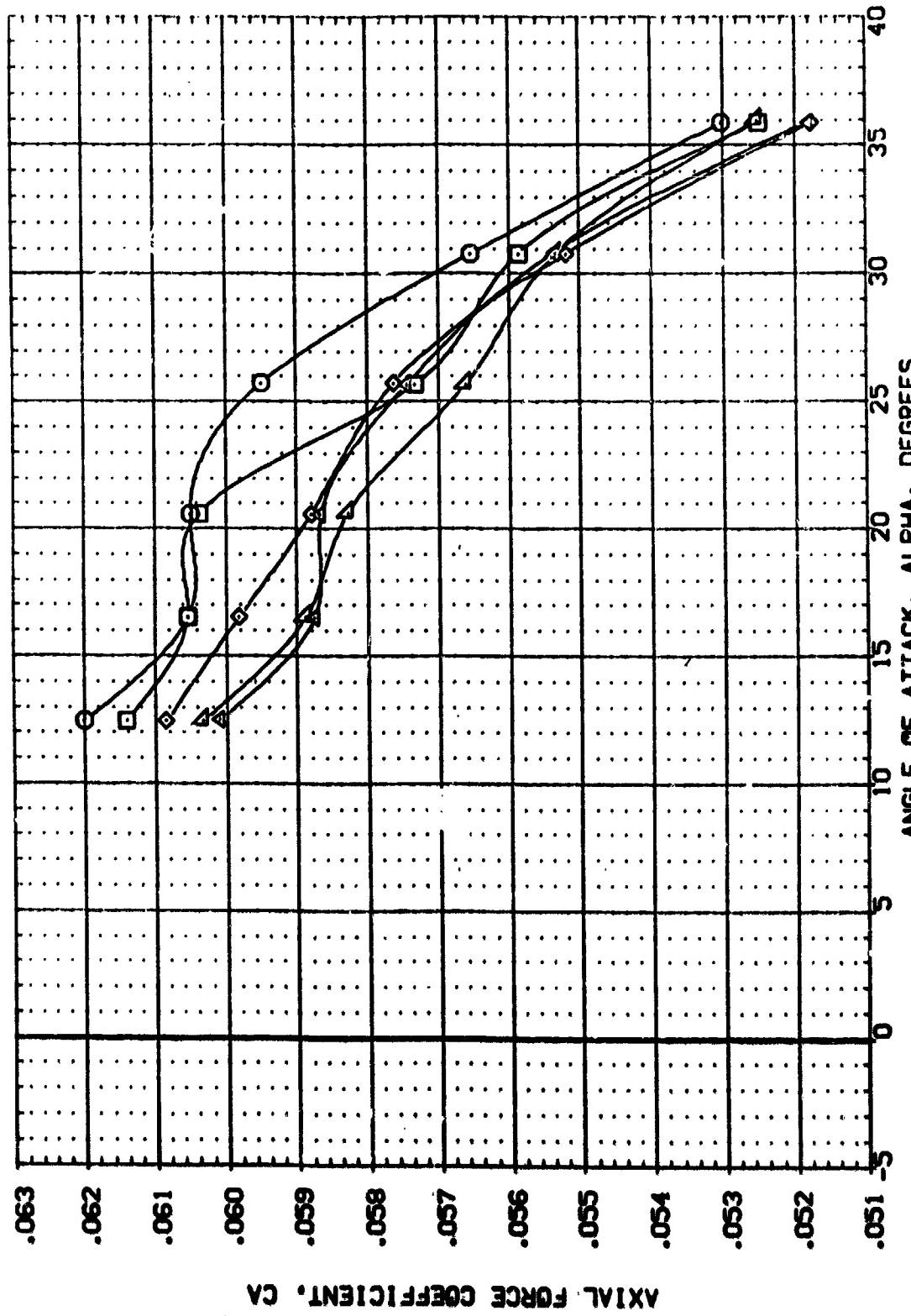
EFFECT OF YAW NOZZLE PRESSURE

(A)<sub>MACH</sub> = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

OPH021	MA-7, UPNT	1031, ROCKWELL	PFR	CG	CONF.	BVN1
OPH026	MA-7, UPNT	1031	ROCKWELL	PFR	CG	CONF.
OPH029	MA-7, UPNT	1031	ROCKWELL	PFR	CG	CONF.
OPH030	MA-7, UPNT	1031	ROCKWELL	PFR	CG	CONF.
OPH035	MA-7, UPNT	1031	ROCKWELL	PFR	CG	CONF.

REFERENCE INFORMATION  
 REF. FL.  
 SREF .7245  
 LREF 7.8828  
 BREF 15.1152  
 XHPP 12.9510  
 YHPP .0000  
 ZHPP 6.0150  
 SCALE



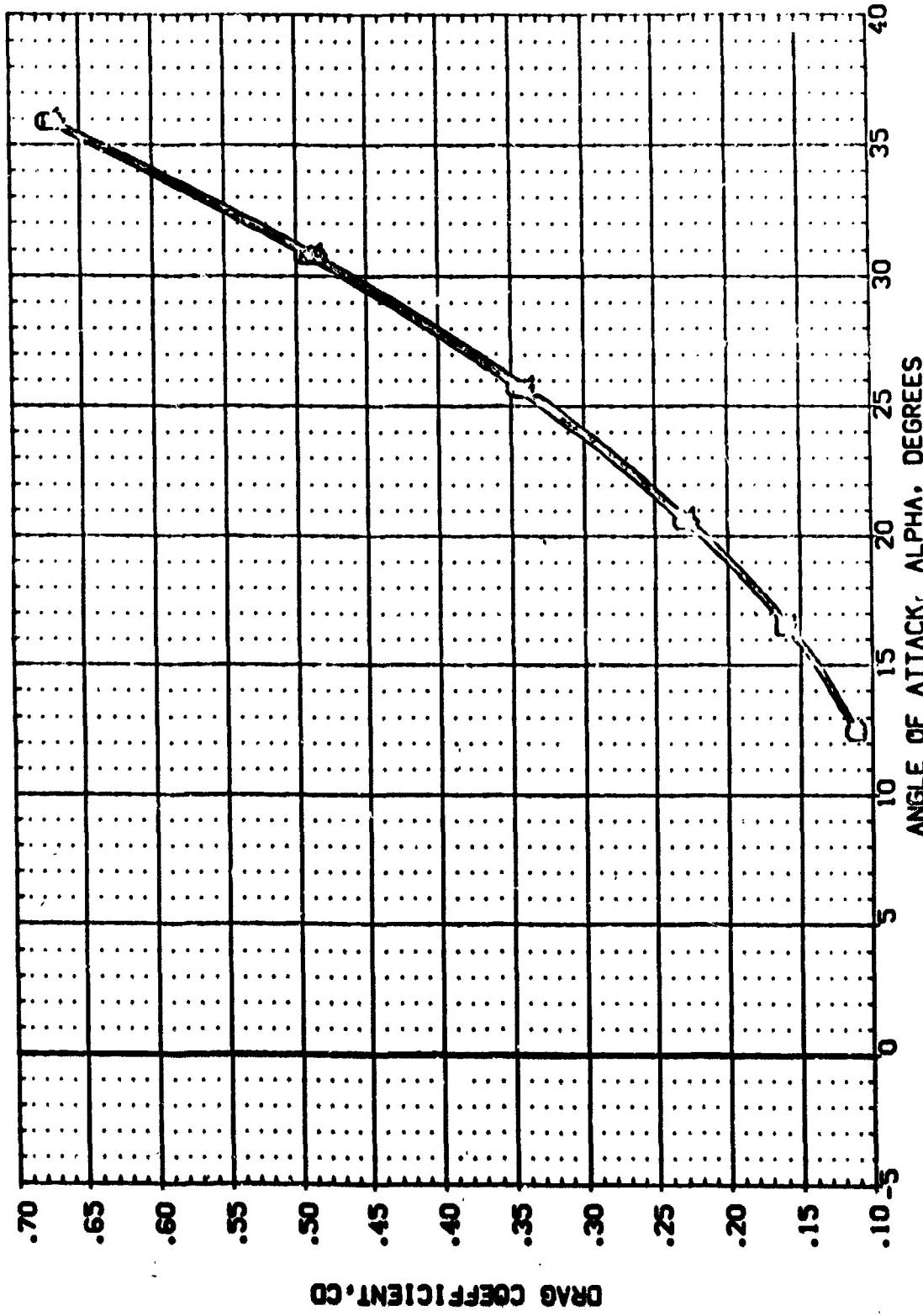
EFFECT OF YAW NOZZLE PRESSURE  
 MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(C)	MA-7.5P7	1001	ROCKWELL	P&R	CONF:	B71N1
(□)	MA-7.5P7	1031	ROCKWELL	P&R	CONF:	B71N1
(X)	MA-7.5P7	1031	ROCKWELL	P&R	CONF:	B71N1
(△)	MA-7.5P7	1031	ROCKWELL	P&R	CONF:	B71N1
(○)	MA-7.5P7	1031	ROCKWELL	P&R	CONF:	B71N1

REFERENCE INFORMATION

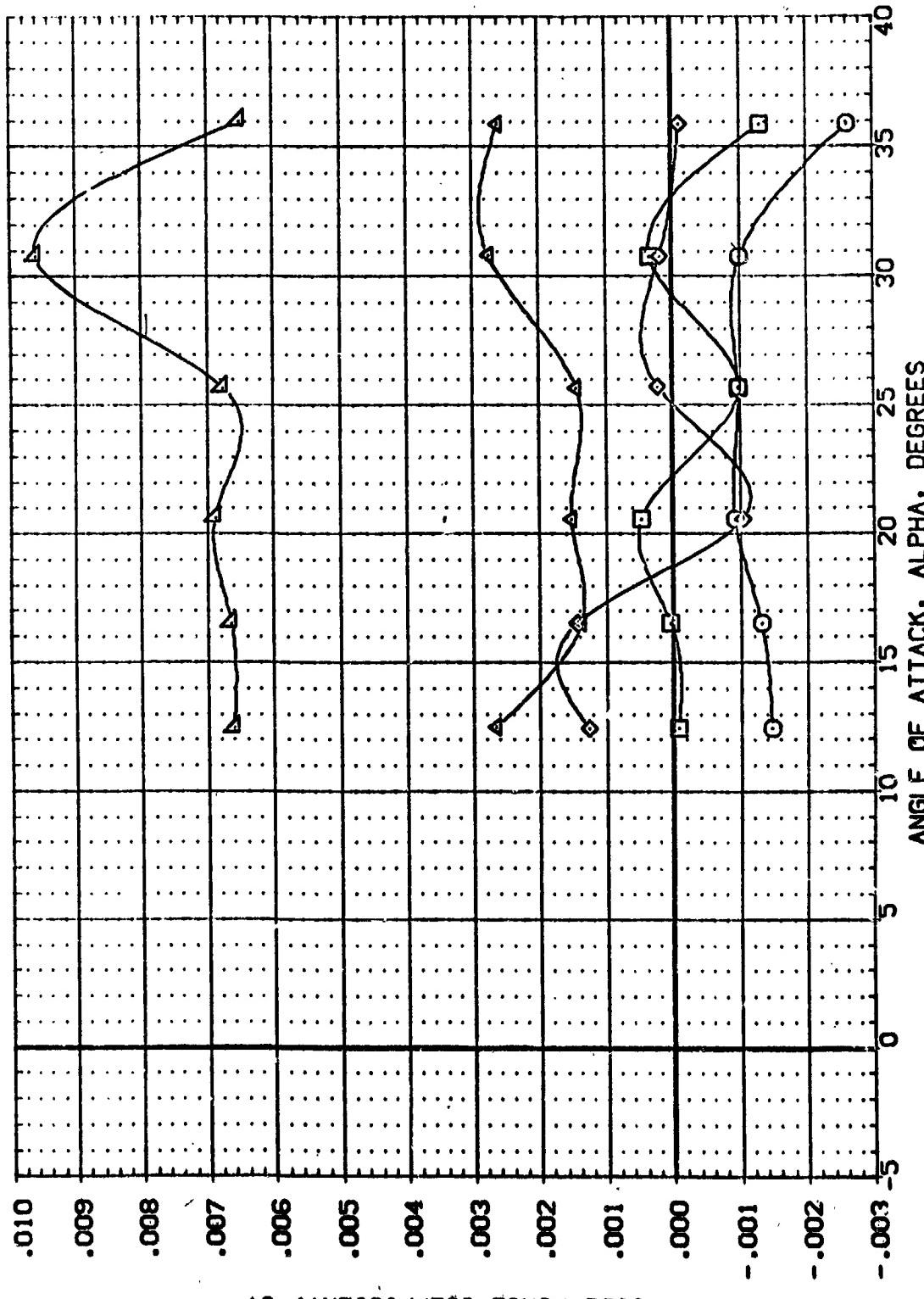
SREF	.7245	SO. FT.
LREF	7.0828	INCHES
BREF	15.152	INCHES
XREF	12.963	INCHES
YHR	6.000	INCHES
ZHR	6.000	INCHES
2Y-2P	6.000	INCHES
SCALE	.315	



DATA SET SYMBOL CONFIGURATION DESCRIPTION

CPM021	□	MA-7 UPNT	1031	ROCKWELL	PRR	GRB.	CONE:	BVTRN1
CPM026	○	MA-7 UPNT	1031	ROCKWELL	PGR	GRB.	CONE:	BVTRN1
CPM029	◇	MA-7 UPNT	1031	ROCKWELL	PGR	GRB.	CONE:	BVTRN1
CPM030	×	MA-7 UPNT	1031	ROCKWELL	PGR	GRB.	CONE:	BVTRN1
CPM035	△	MA-7 UPNT	1031	ROCKWELL	PGR	GRB.	CONE:	BVTRN1

REFERENCE INFORMATION  
 SREF .7245 SO.F.T.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0150 INCHES  
 SCALE .0150



EFFECT OF YAW NOZZLE PRESSURE

( $\Delta$ MACH = 4.00)

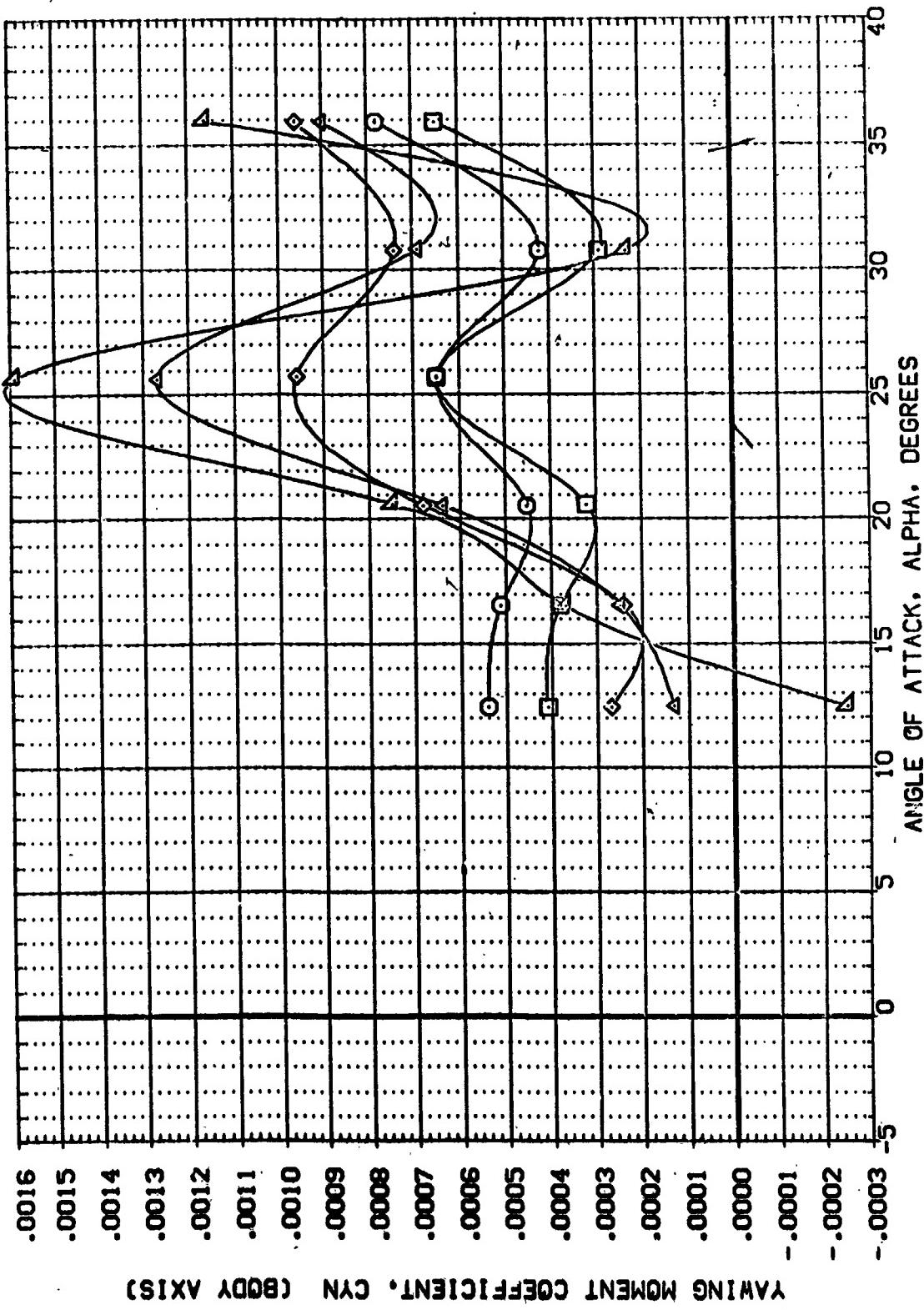
PAGE 8E

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(OP021)	MA-7. UPWT	1031. ROCKWELL	PRR	GRB.	CONF:	BVTN1
(OP026)	MA-7. UPWT	1031. ROCKWELL	PRR	GRB.	CONF:	BVTN1
(OP028)	MA-7. UPWT	1031. ROCKWELL	PRR	GRB.	CONF:	BVTN1
(OP030)	MA-7. UPWT	1031. ROCKWELL	PRR	GRB.	CONF:	BVTN1
(OP036)	MA-7. UPWT	1031. ROCKWELL	PRR	GRB.	CONF:	BVTN1

REFERENCE INFORMATION

SREF	.7245	SO. FT.
LREF	7.8823	INCHES
BREF	15.1152	INCHES
XREF	12.9510	INCHES
YREF	.0020	INCHES
ZREF	.6000	INCHES
SCALE	.0150	



EFFECT OF YAW NOZZLE PRESSURE

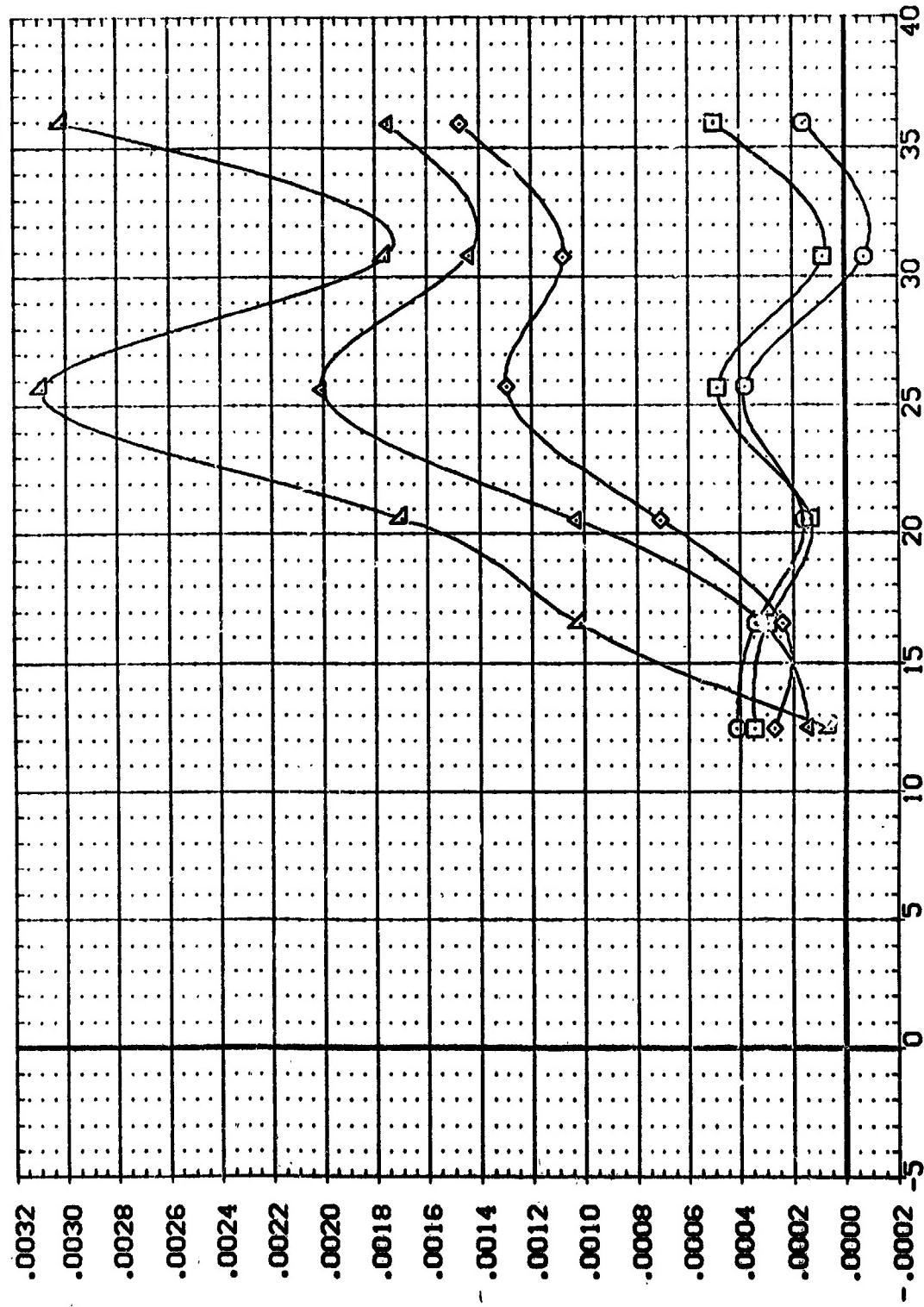
(A)MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CPN021)	□	MA-7-JPV1 1031, ROCKWELL FFR
(CPN026)	□	MA-7-JPV1 1031, ROCKWELL FFR
(CPN029)	△	MA-7-JPV1 1031, ROCKWELL FFR
(CPN030)	△	MA-7-JPV1 1031, ROCKWELL FFR
(CPN035)	△	MA-7-JPV1 1031, ROCKWELL FFR

REFERENCE INFORMATION

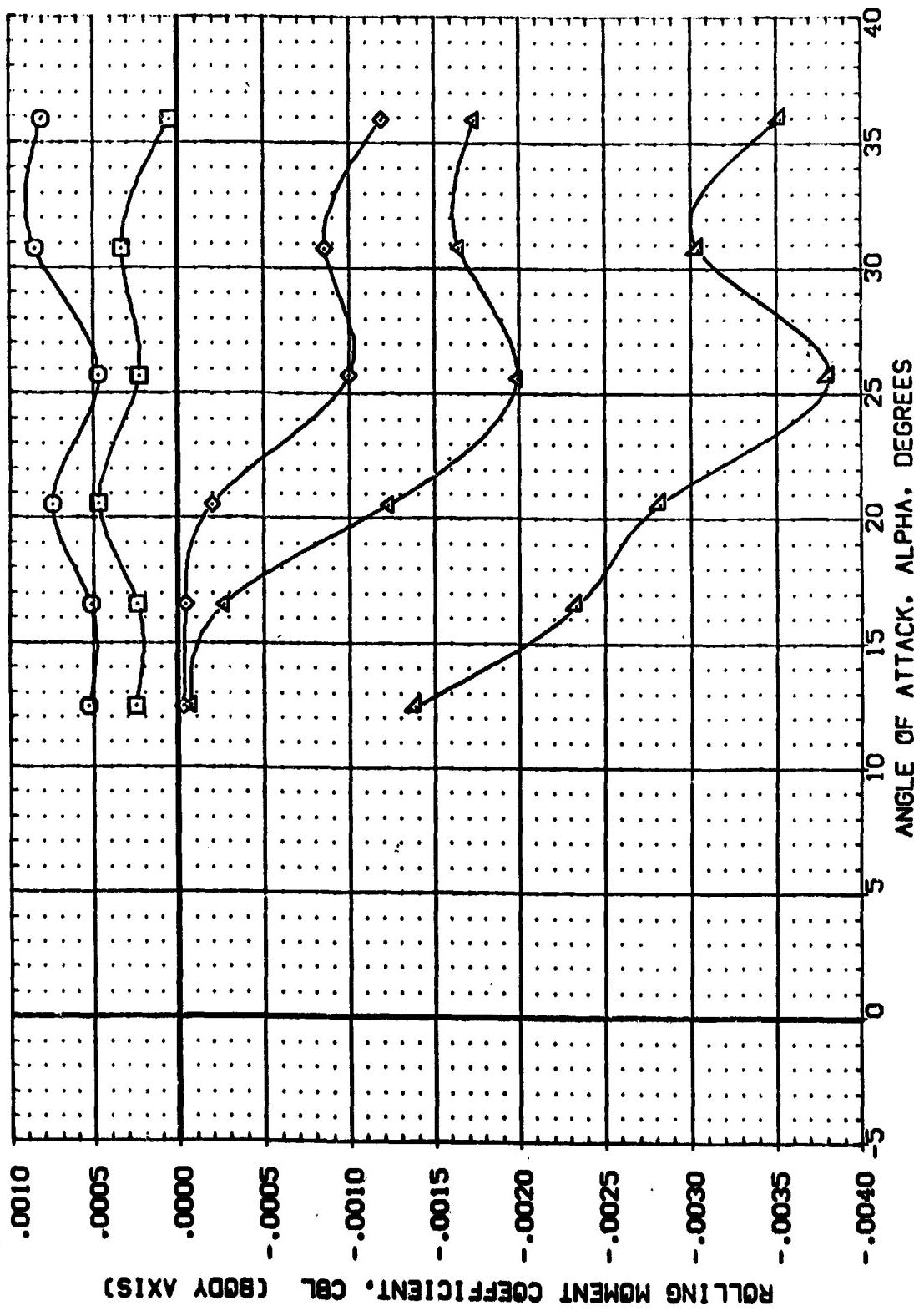
SREF	.7245	SQ.FT.
LREF	.8828	INCHES
BREF	15.1152	INCHES
XRP	12.9510	INCHES
YRP	.0000	INCHES
ZRP	6.0000	INCHES
SCALE	.0150	



EFFECT OF YAW NOZZLE PRESSURE  
( $\Delta$ MACH = 4.00)

DATA SET NAME: CONFIGURATION DESCRIPTION: MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BVTN1  
 CPT021 - MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BVTN1  
 CPT026 - MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BVTN1  
 CPT029 - MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BVTN1  
 CPT030 - MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BVTN1  
 CPT035 - MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BVTN1

REFERENCE INFORMATION: SREF .7245 SL.FT.  
 LREF 7.8828 INCHES  
 BREF 15.152 INCHES  
 XMRP 12.650 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0100 INCHES  
 SCALE



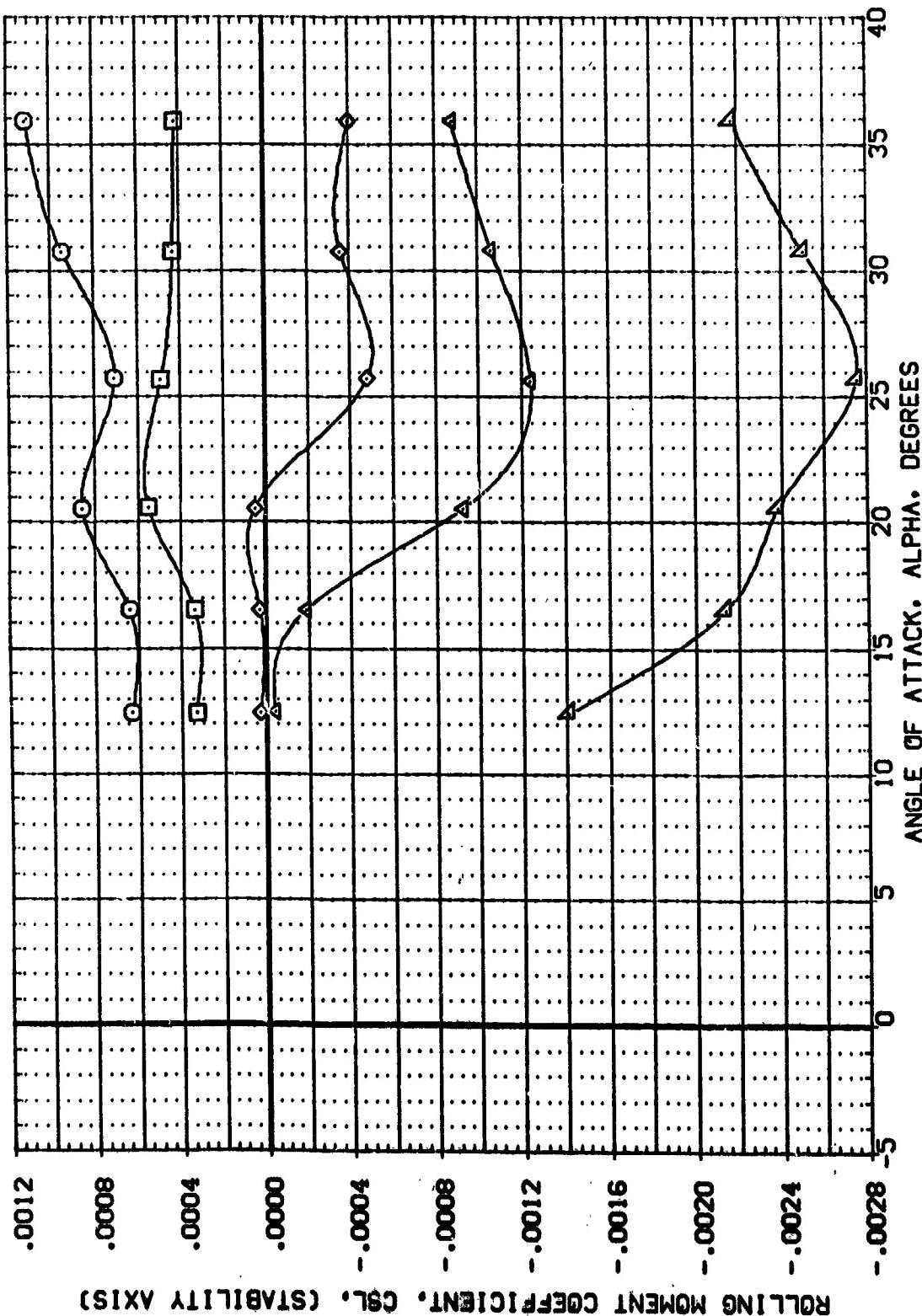
EFFECT OF YAW NOZZLE PRESSURE  
 (A) MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CP-021)	□	MA-7. UPVT	1031. ROCKWELL	F2R	C2B.	CONF.	BNTN
(CP-026)	○	MA-7. UPVT	1031. ROCKWELL	F2R2	C2B.	CONF.	BNTN
(CP-029)	△	MA-7. UPVT	1031. ROCKWELL	F2R2	C2B.	CONF.	BNTN
(CP-030)	◇	MA-7. UPVT	1031. ROCKWELL	F2R	C2B.	CONF.	BNTN
(CP-035)	△	MA-7. UPVT	1031. ROCKWELL	F2R	C2B.	CONF.	BNTN

REFERENCE INFORMATION

SREF	.7245	SQ.FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XHSP	12.9510	INCHES
YHSP	6.0000	INCHES
ZHSP	.0150	INCHES
SCALE		

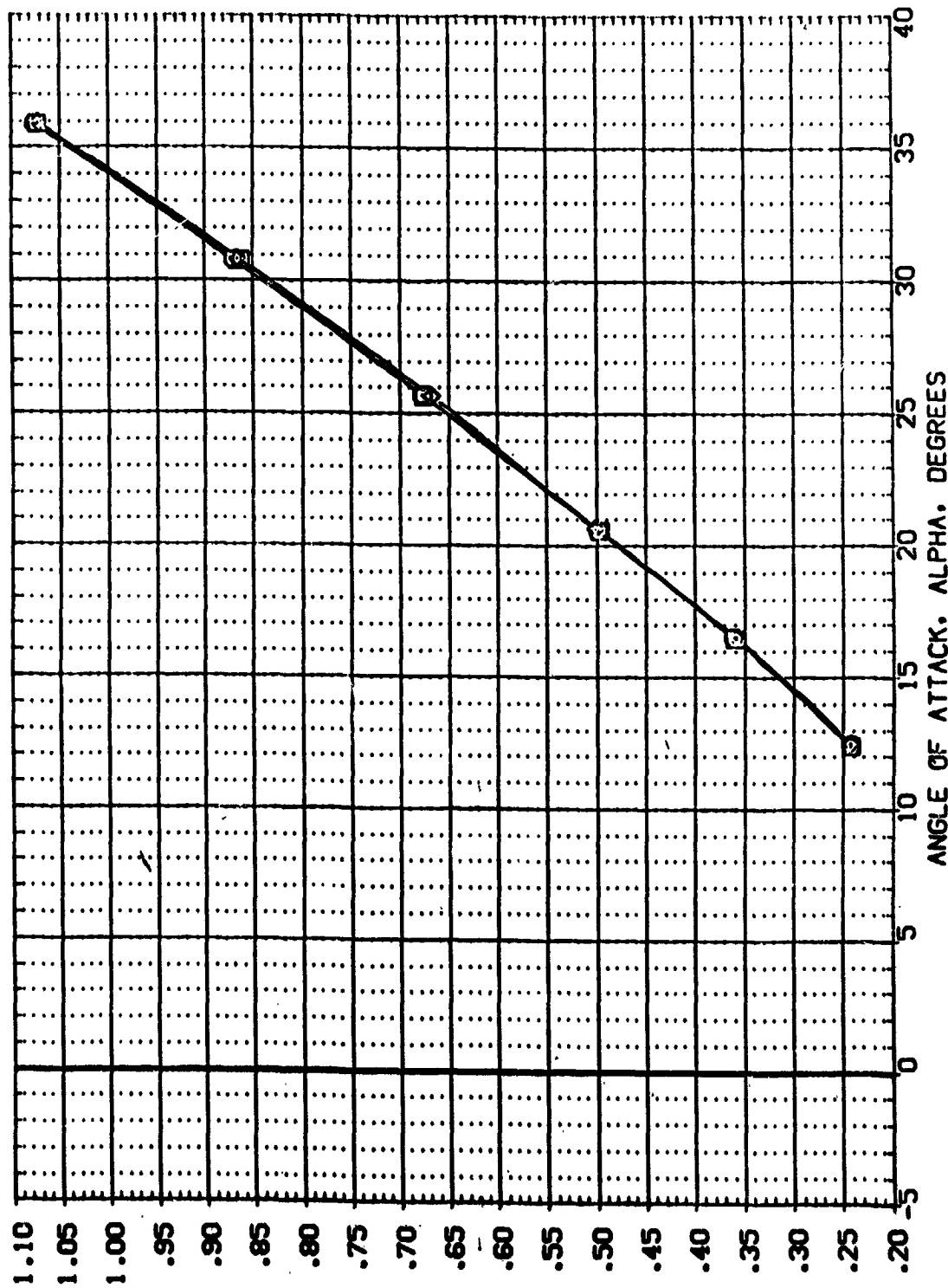


EFFECT OF YAW NOZZLE PRESSURE  
C<sub>AIRMACH</sub> = 4.00

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP021) MA-7, UPN 1031, ROCKWELL PRO GRB. CONF.: BVTN1  
 (CP022) MA-7, UPN 1031, ROCKWELL PRO GRB. CONF.: BVTN1  
 (CP023) MA-7, UPN 1031, ROCKWELL PRO GRB. CONF.: BVTN1

	BETA <sub>A</sub>	P0-JET	RNL	REFERENCE INFORMATION
SREF	.7245	SC. FT.		
LREF	7.8828	INCHES		
BREF	15.1152	INCHES		
XRP	12.9513	INCHES		
YRP	6.0000	INCHES		
ZRP	0.0150	INCHES		
SCALE				

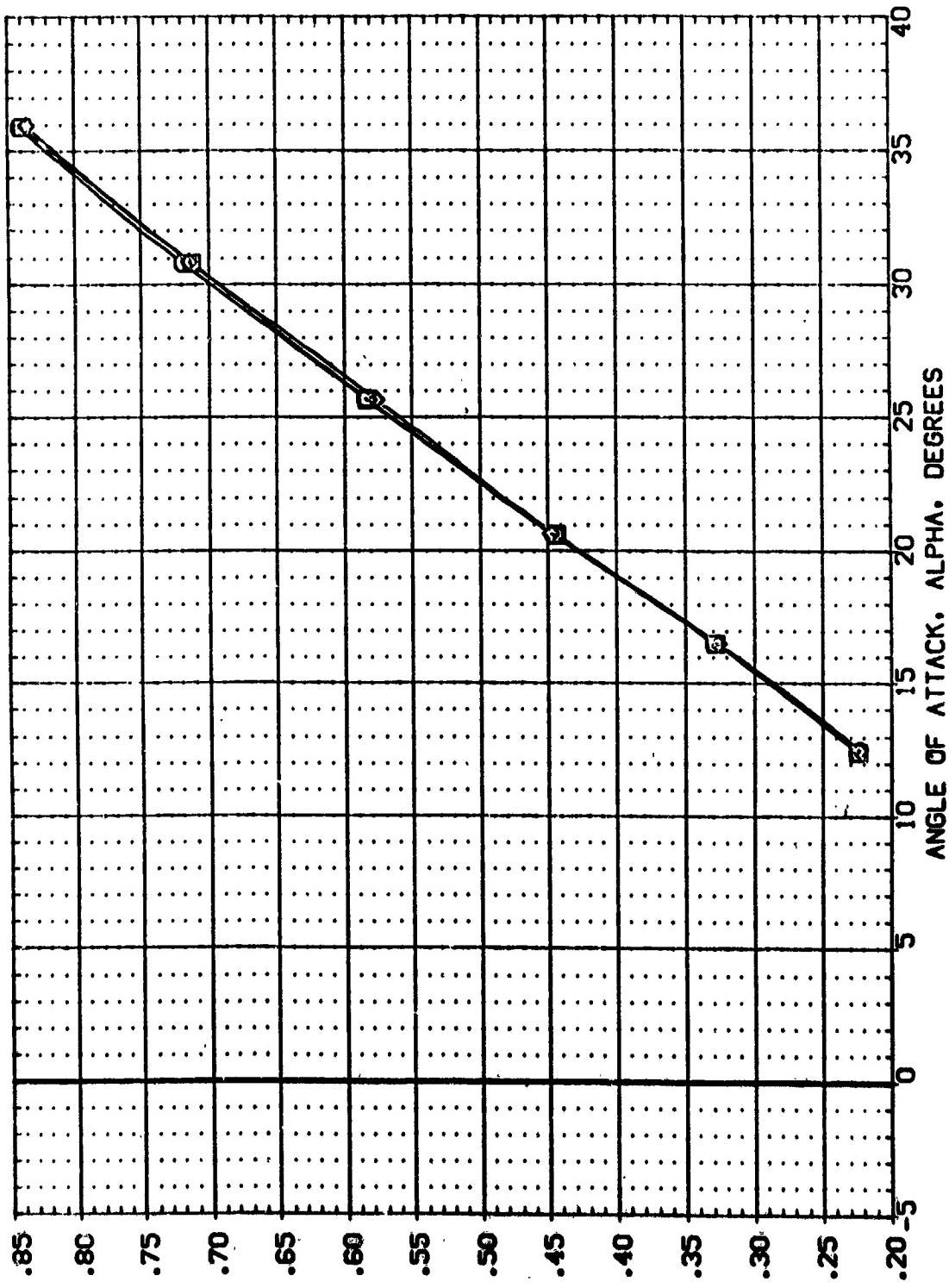


NORMAL FORCE COEFFICIENT, CN

EFFECT OF YAW ANGLE (JET OFF)  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP-221) MA-7, UPN 1031, ROCKWELL PRR ORB. CONF. BVTN  
 (CP-222) MA-7, UPN 1031, ROCKWELL PRR ORB. CONF. BVTN  
 (CP-223) MA-7, UPN 1031, ROCKWELL PRR ORB. CONF. BVTN

	REFERENCE INFORMATION	REFERENCE INFORMATION
SREF	.7245	SO. FT.
LREF	.78628	INCHES
BREF	15.1152	INCHES
XTRP	12.9510	INCHES
YTRP	6.0000	INCHES
ZTRP	.0150	INCHES
SCALE		



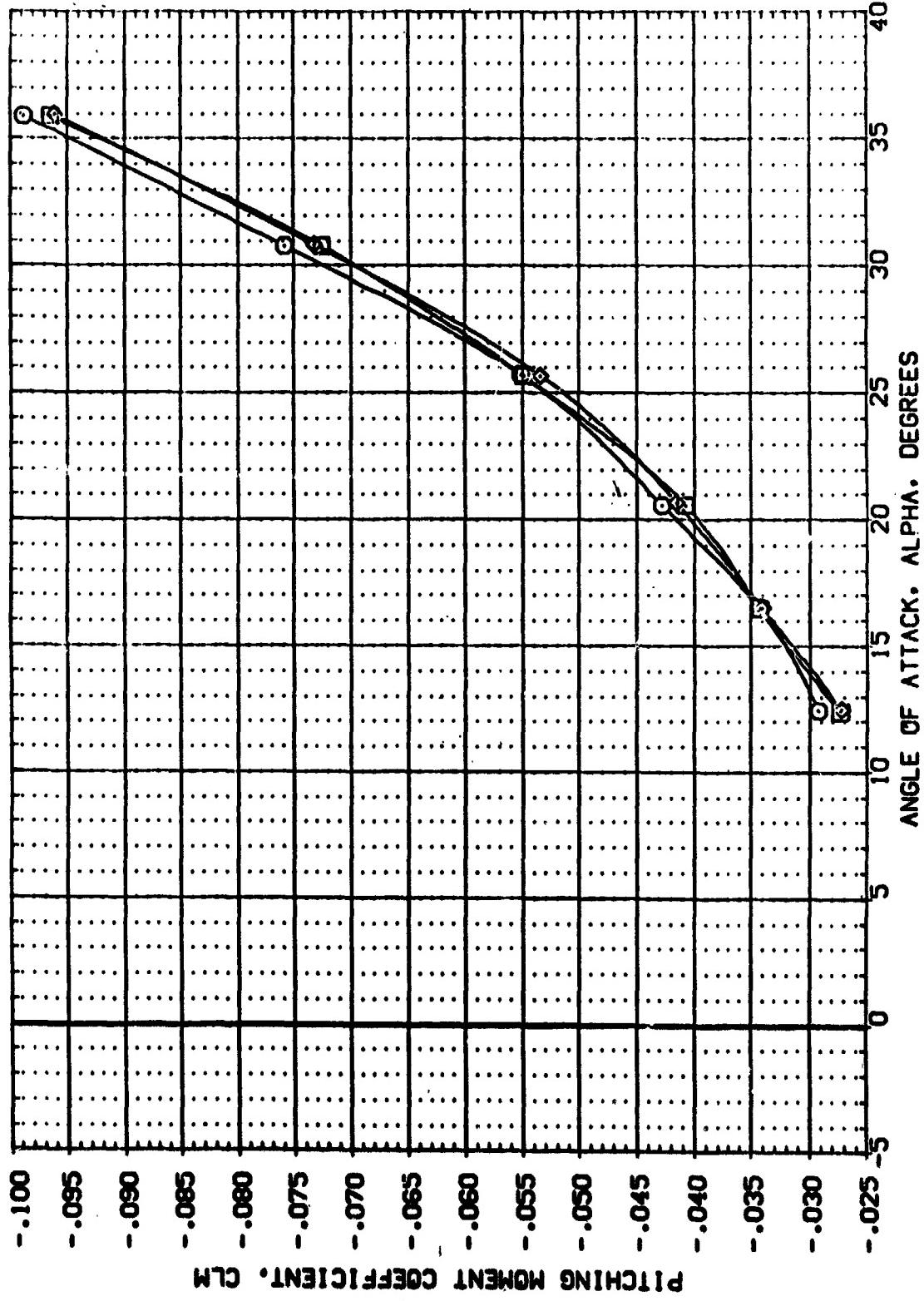
LIFT COEFFICIENT, CL

EFFECT OF YAW ANGLE (JET OFF)  
 $\text{C}_\text{AOA MACH} = -4.00$

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DATA SET NUMBER CONFIGURATION DESCRIPTION  
 (CPM21) 8 MA-7. UPNT 1031. ROCKWELL PRR CONF. BNMN!  
 (CPM22) 8 MA-7. UPNT 1031. ROCKWELL PRR CONF. BNMN!  
 (CPM23) 8 MA-7. UPNT 1031. ROCKWELL PRR CONF. BNMN!

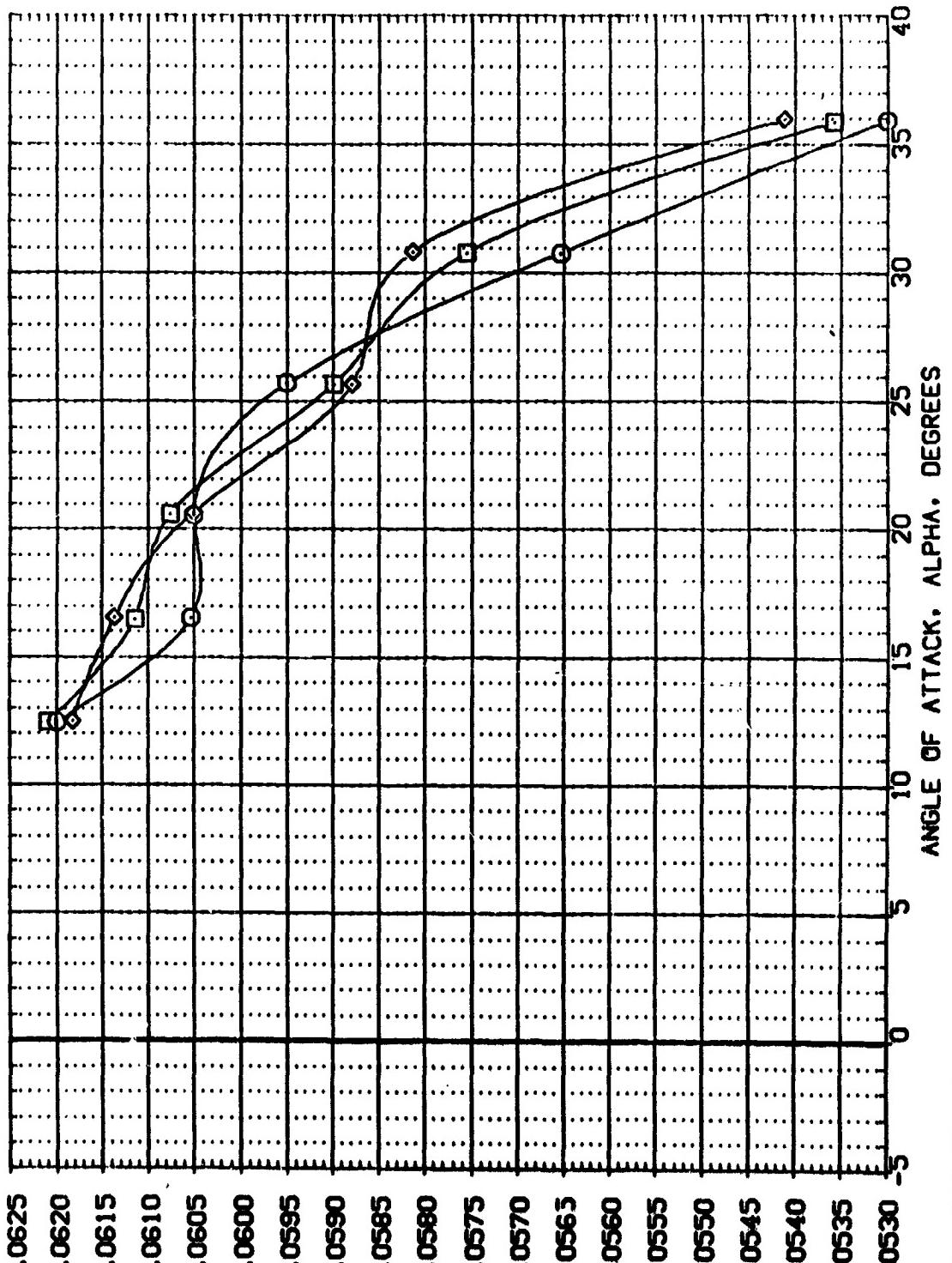
REFERENCE INFORMATION  
 SREF 7.7245 SO.FT.  
 LREF 7.8628 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.5510 INCHES  
 YREF .0000 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150



EFFECT OF YAW ANGLE (JET OFF)  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 CPH021 MA-7, UPNT 103, ROCKWELL PAR ORB. CONF. BYTNI  
 CPH022 MA-7, UPNT 103, ROCKWELL PRR ORB. CONF. BYTNI  
 CPH023 MA-7, UPNT 103, ROCKWELL PRR ORB. CONF. BYTNI

REFERENCE INFORMATION  
 SREF .7245 SC. FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF 6.3330 INCHES  
 ZREF 6.3330 INCHES  
 SCALE 0.50



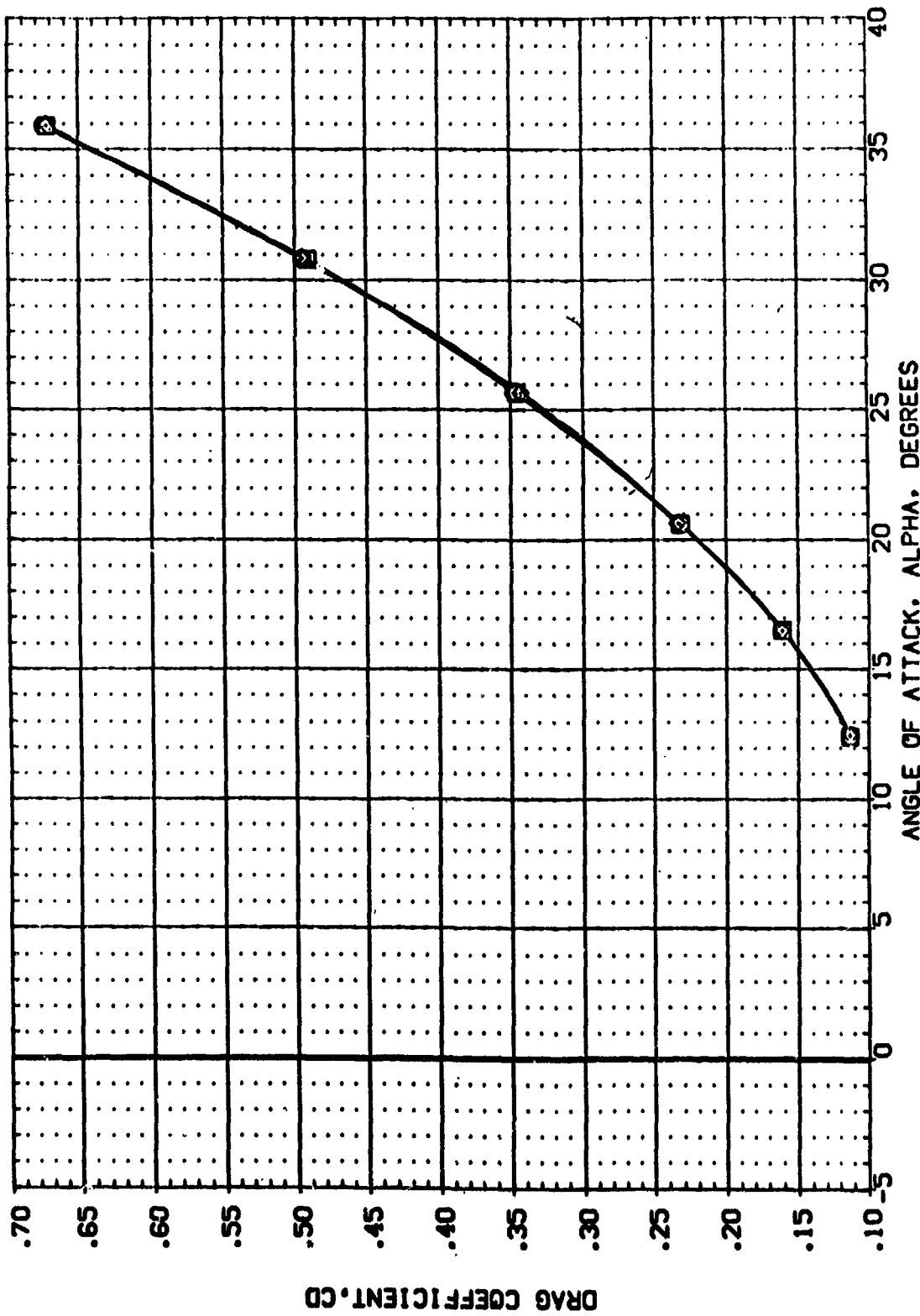
AXIAL FORCE COEFFICIENT, CA

EFFECT OF YAW ANGLE (JET OFF)  
 (MACH = 4.00)

DATA SET NAME: CONFIGURATION DESCRIPTION  
 CP-021 MA-7, UPVT 1031, ROCKWELL PAR CRB. COEF.  
 CP-022 MA-7, UPVT 1031, ROCKWELL PAR CRB. COEF.  
 CP-023 MA-7, UPVT 1031, ROCKWELL PAR CRB. COEF.

	BETA	P0-JET	AVL
CP-021	.000	.000	1.000
CP-022	.000	.000	1.000
CP-023	-2.500	.000	1.000
	-5.000	.000	1.000

	SREF	SQ.FT.
CP-021	7.245	7.8828
CP-022	15.1152	15.1152
CP-023	12.9510	12.9510
	6.0000	6.0000
	.0150	.0150



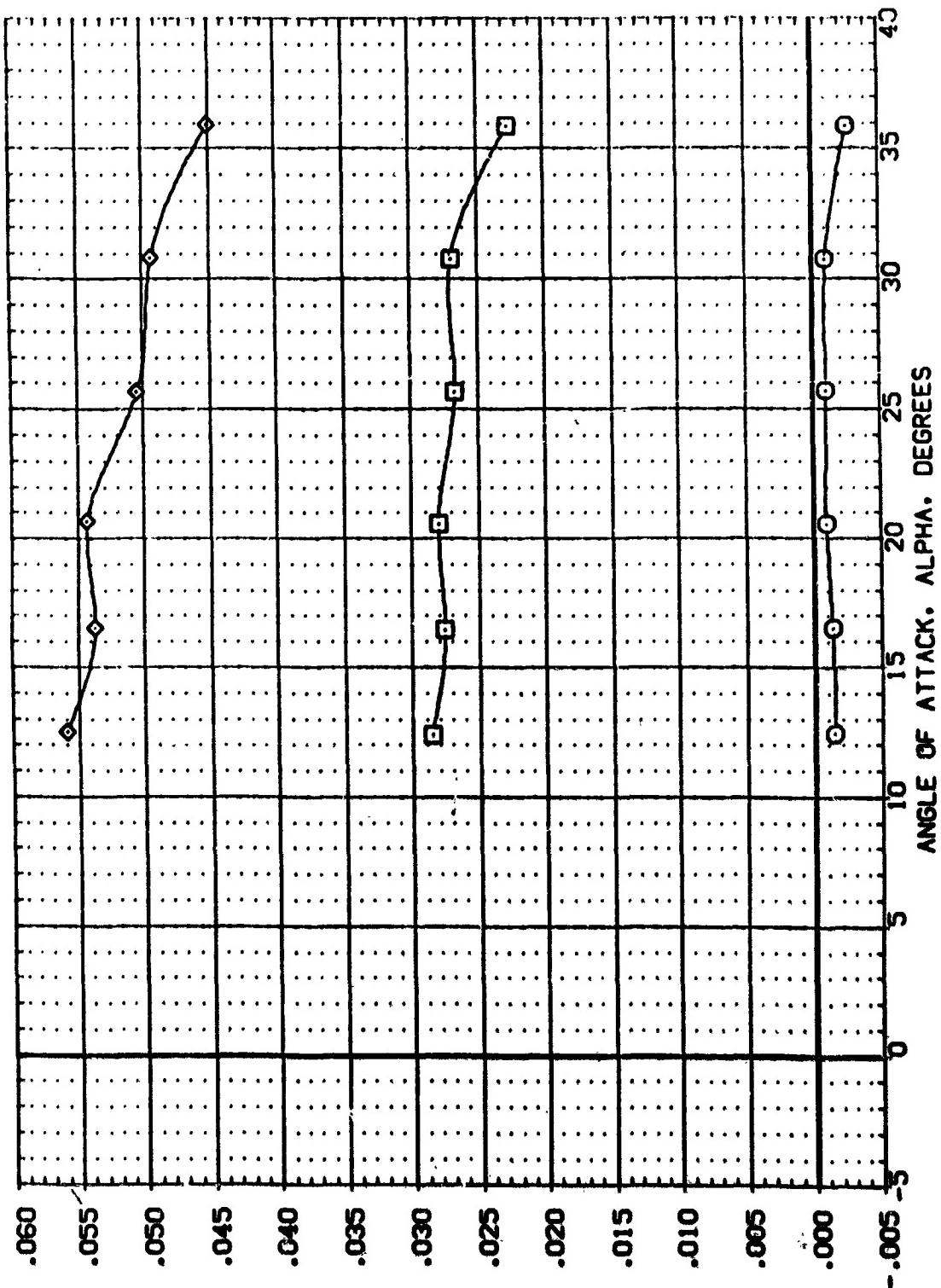
EFFECT OF YAW ANGLE (JET OFF)  
 $(\Delta MACH = 4.00)$

DATA SET SOURCE  
CPR021  
CPR022  
CPR023  
MA-7-U.  
MA-7-U.

## DATA SET SYMBOL CONFIGURATION DESCRIPTION

PO-JET	R&V
.000	.000
.000	.000
.000	.000
.000	.000
-2.500	-2.500
SETA	

REFERENCE	INFORMATION	SC. FT.	SC. FTS.	SC. FTS.	SC. FTS.
SREF	.7245	7.828	15.152	12.864	6.000
LREF					
BREF					
BREFP					
MREF					
MREFP					
SCALE					



EFFECT OF YAW ANGLE ON CAVCMCH = 4.00

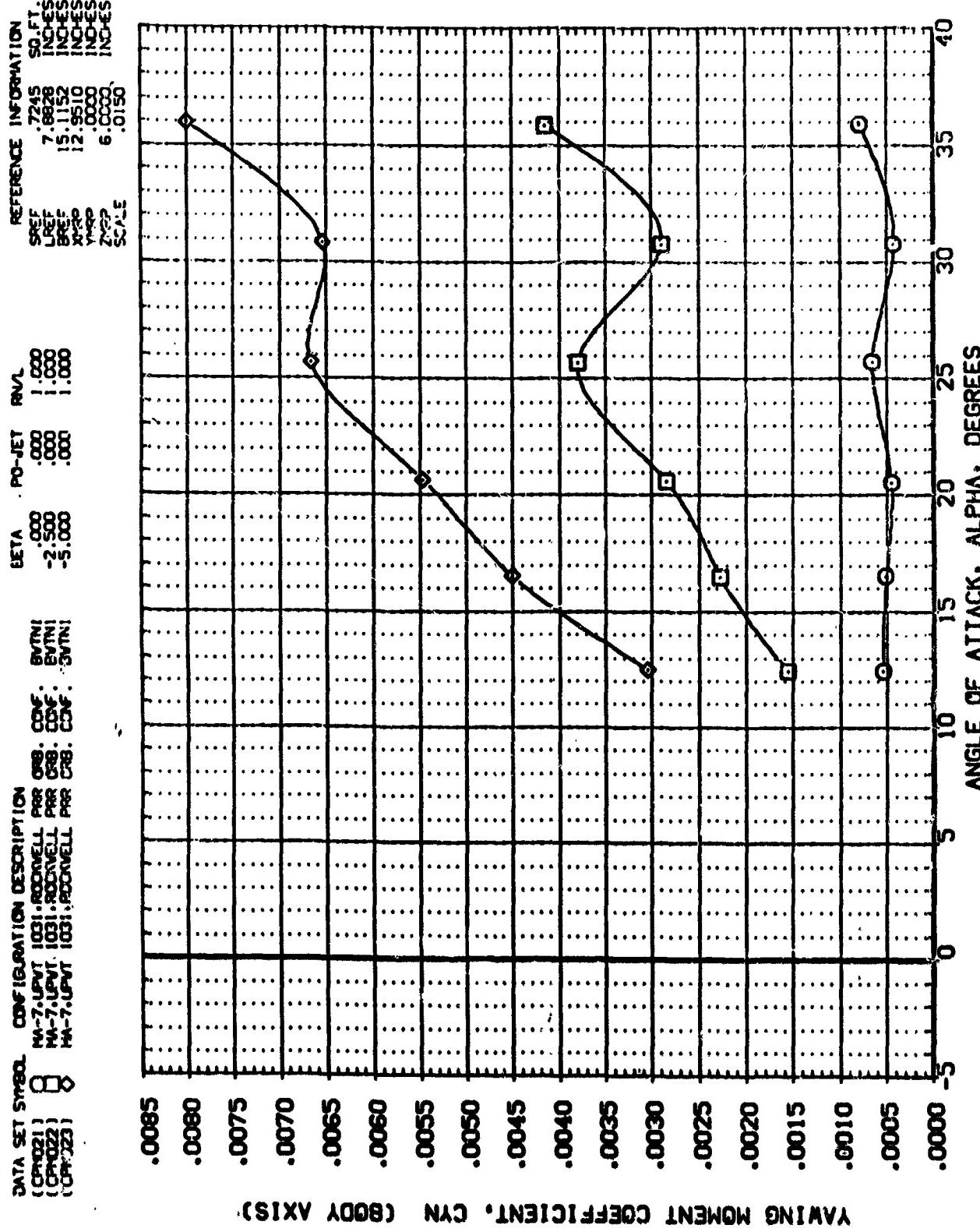
## ANGLE OF ATTACK. ALPHA. DEGREES

95

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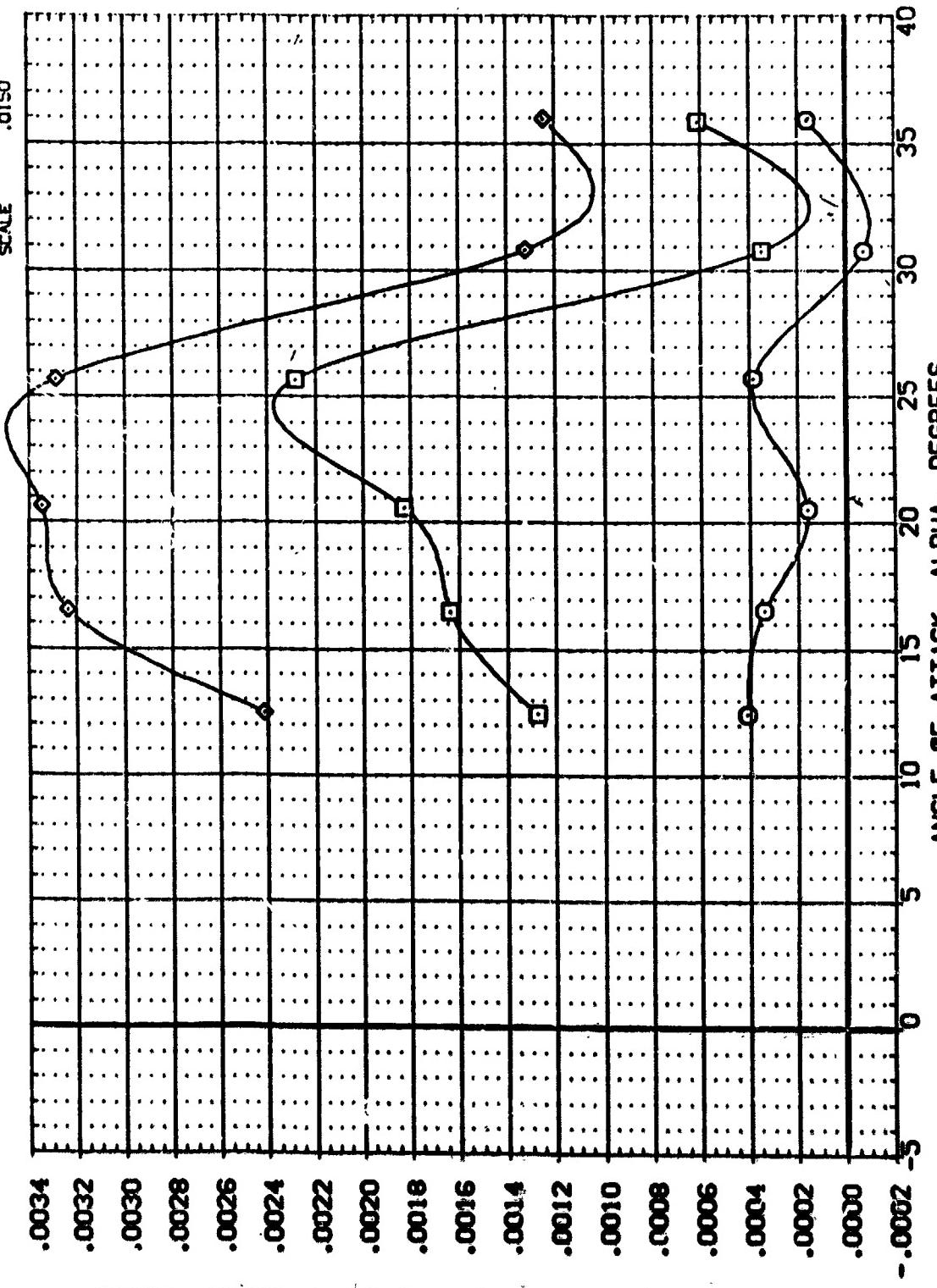
$$(\text{A})\text{MACH} = 4.00$$

EEEELI DE YAN AND E. JET DEEE



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CNS1) MA-7. UPVT 1031. ROCKWELL F4B. CONF: BYTNI  
 (CNS2) MA-7. UPVT 1031. ROCKWELL F4B. CONF: BYTNI  
 (CNS3) MA-7. UPVT 1031. ROCKWELL F4B. CONF: BYTNI

REFERENCE INFORMATION  
 SREF 7245 SC.F1.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9610 INCHES  
 YREF 6.0000 INCHES  
 ZREF 6.0330 INCHES  
 SCALE .0150



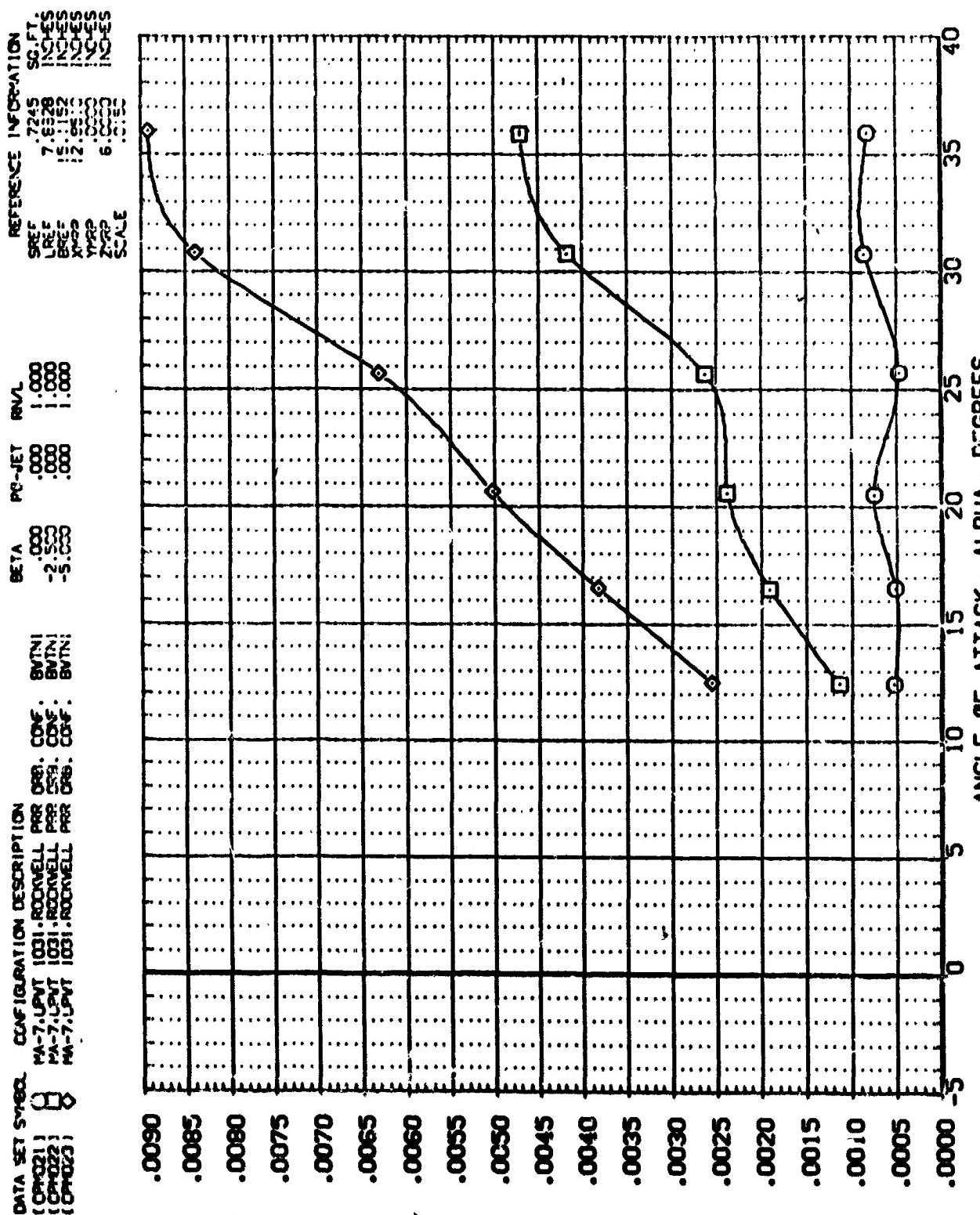
YAWING MOMENT COEFFICIENT. CLn. (STABILITY AXIS)

EFFECT OF YAW ANGLE (JET OFF)  
 (MACH = 4.00)

(A)MACH = 4.00  
EFFECT OF YAW ANGLE (JET OFF)

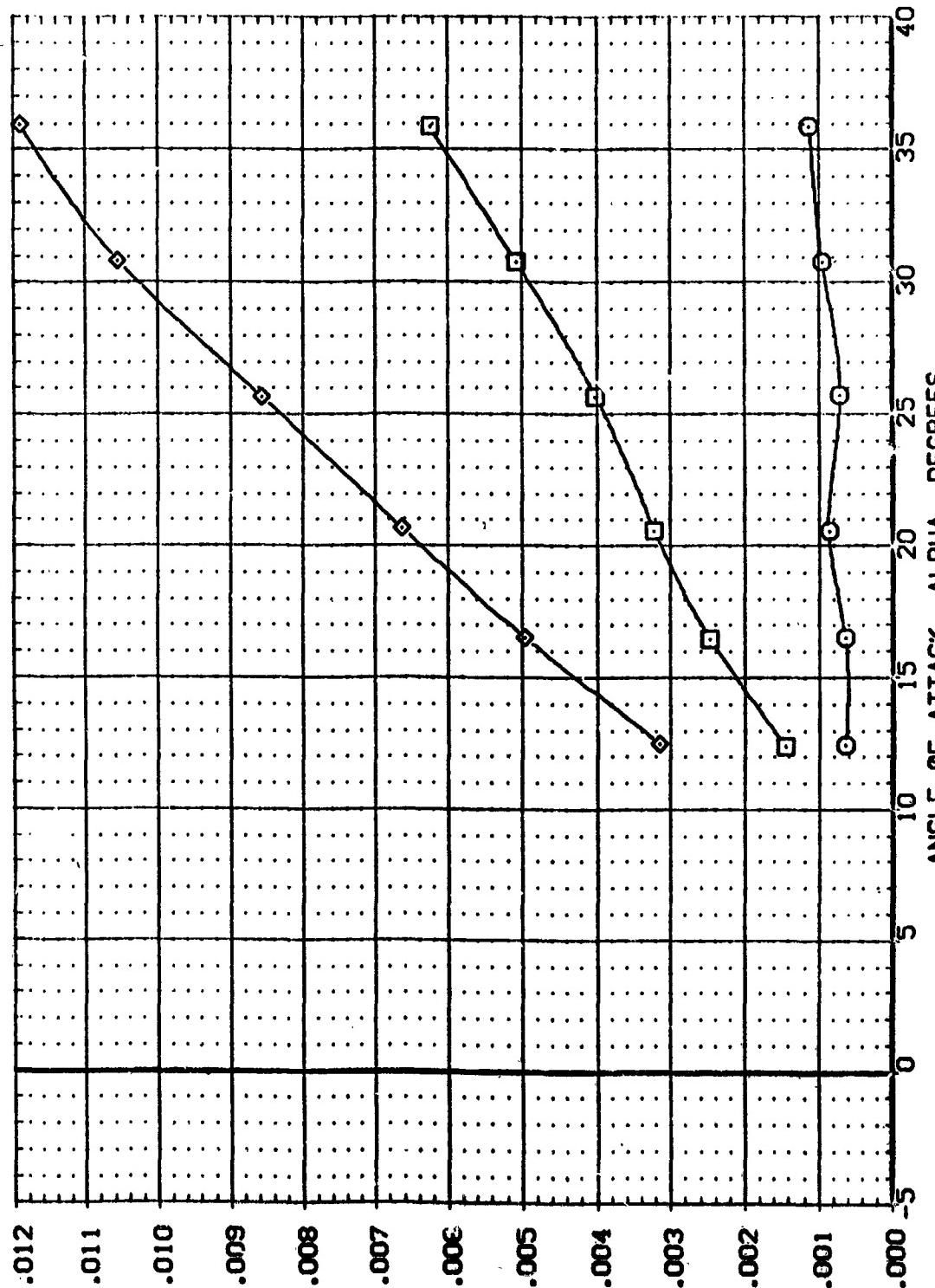
(A)MACH = 4.00

ROLLING MOMENT COEFFICIENT, C<sub>R</sub> (BODY AXIS)



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP021) MA-7, UPVT 103; ROCKWELL PRR GRB. CONF.: BMTNI  
 (CP022) MA-7, UPVT 103; ROCKWELL PRR GRB. CONF.: BMTNI  
 (CP023) MA-7, UPVT 103; ROCKWELL PRR GRB. CONF.: BMTNI

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.5510 INCHES  
 YMRP .0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150



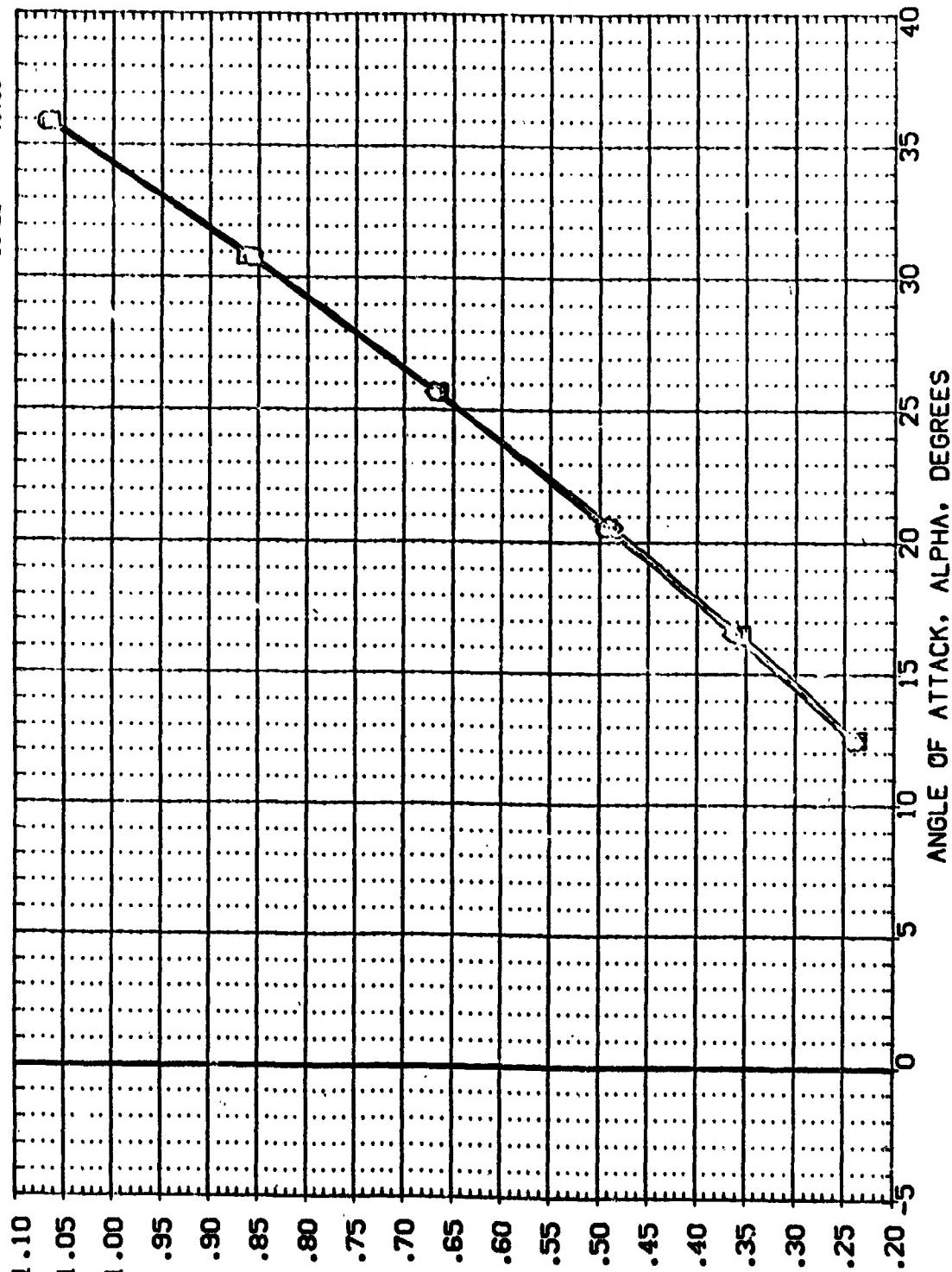
ROLLING MOMENT COEFFICIENT, CSL. (STABILITY AXIS)

EFFECT OF YAW ANGLE (JET OFF)  
 (A)MACH = 4.00

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP021) O MA-7, UPWT 1031, ROCKWELL P72 GRB, CGF, BYTN  
 (CP022) □ MA-7, UPWT 1031, ROCKWELL P72 GRB, CGF, BYTN  
 (CP023) X MA-7, UPWT 1031, ROCKWELL P72 GRB, CGF, BYTN  
 (CP024) X MA-7, UPWT 1031, ROCKWELL P72 GRB, CGF, BYTN

REFERENCE INFORMATION  
 SREF .7245 SO.FT.  
 LREF .7828 INCHES  
 BREF 15.152 INCHES  
 XREF 12.950 INCHES  
 YREF 6.000 INCHES  
 ZREF .0150 INCHES  
 SCALE .0150



NORMAL FORCE COEFFICIENT, CN

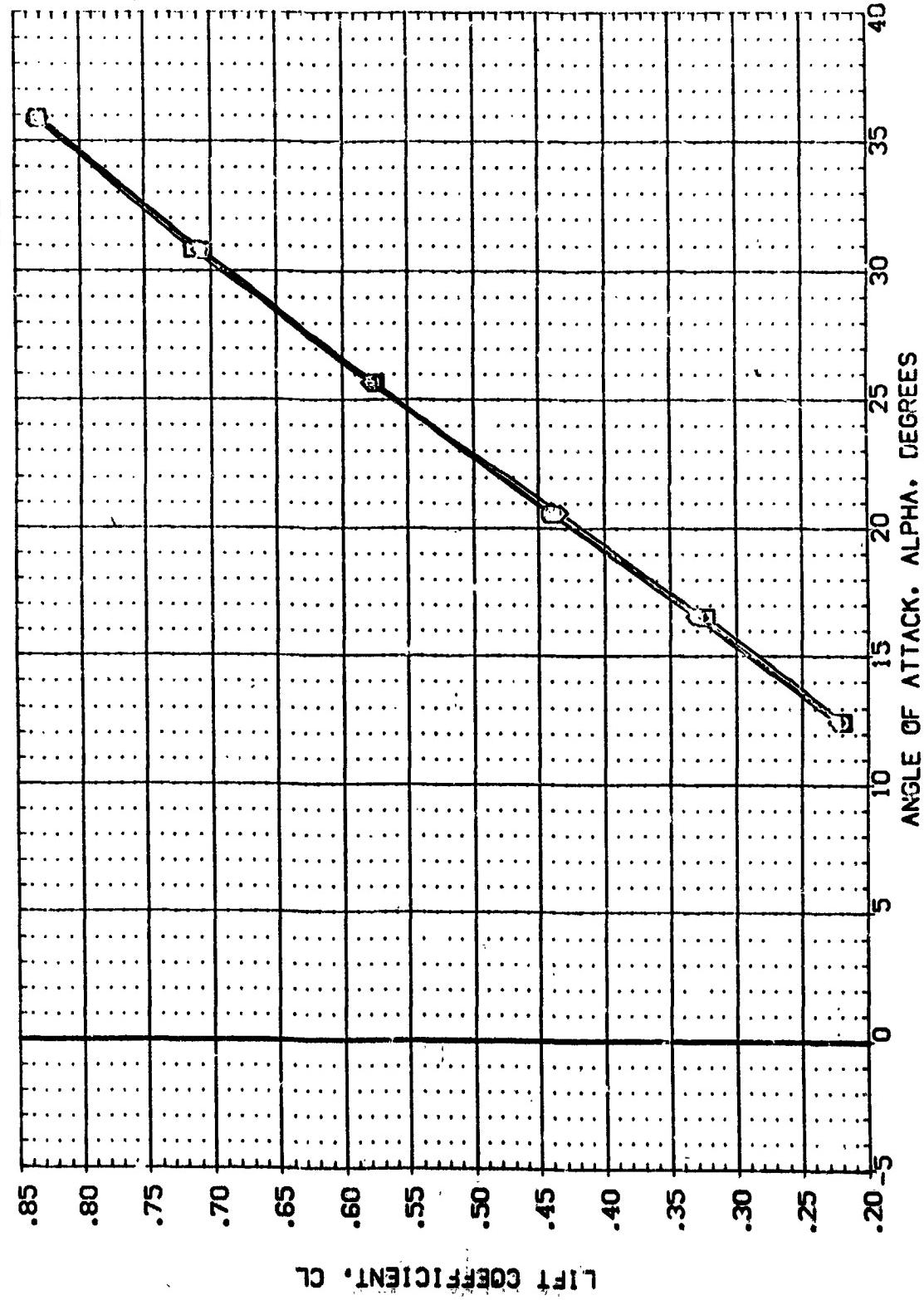
EFFECT OF YAW ANGLE (JET ON)

CAMMACH = 4.00

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP0221) MA-7; UPVT 1031; ROCKWELL PRR ORB. CONF.: BYN1  
 (CP0220) MA-7; UPVT 1031; ROCKWELL PRR ORB. CONF.: BYN1  
 (CP0322) MA-7; UPVT 1031; ROCKWELL PRR ORB. CONF.: BYN1  
 (CP0333) MA-7; UPVT 1031; ROCKWELL PRR ORB. CONF.: BYN1

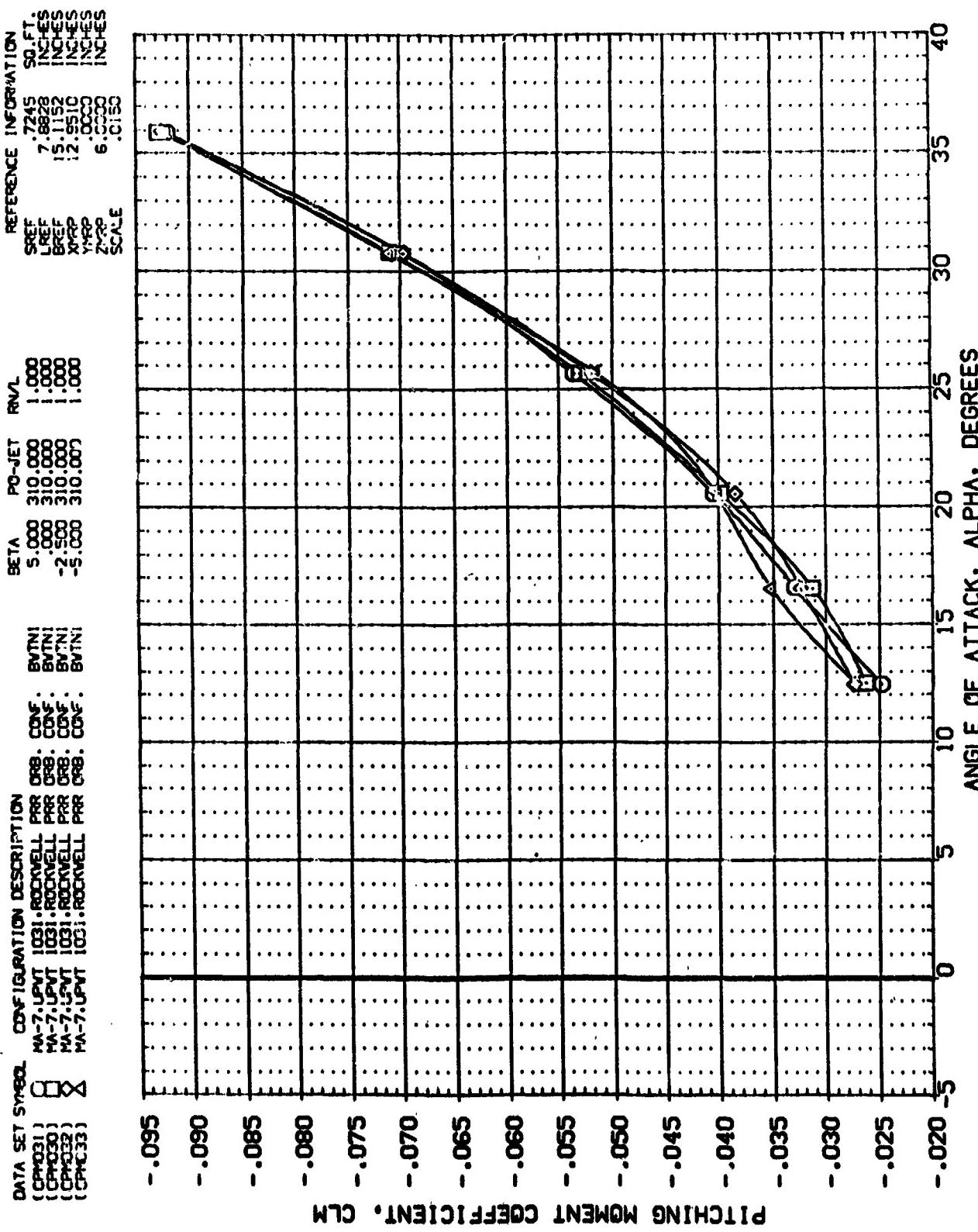
REFERENCE INFORMATION  
 SREF 7245 SC.FT.  
 LREF 7.8328 INCHES  
 BREF 15.1152 FEET  
 XMRP 12.5112 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0152 INCHES  
 SCALE



EFFECT OF YAW ANGLE (JET ON)

C<sub>AIR</sub>MACH = 4.00

EFFECT OF YAW ANGLE (JET ON)  
 $(\Delta)MACH = 4.00$

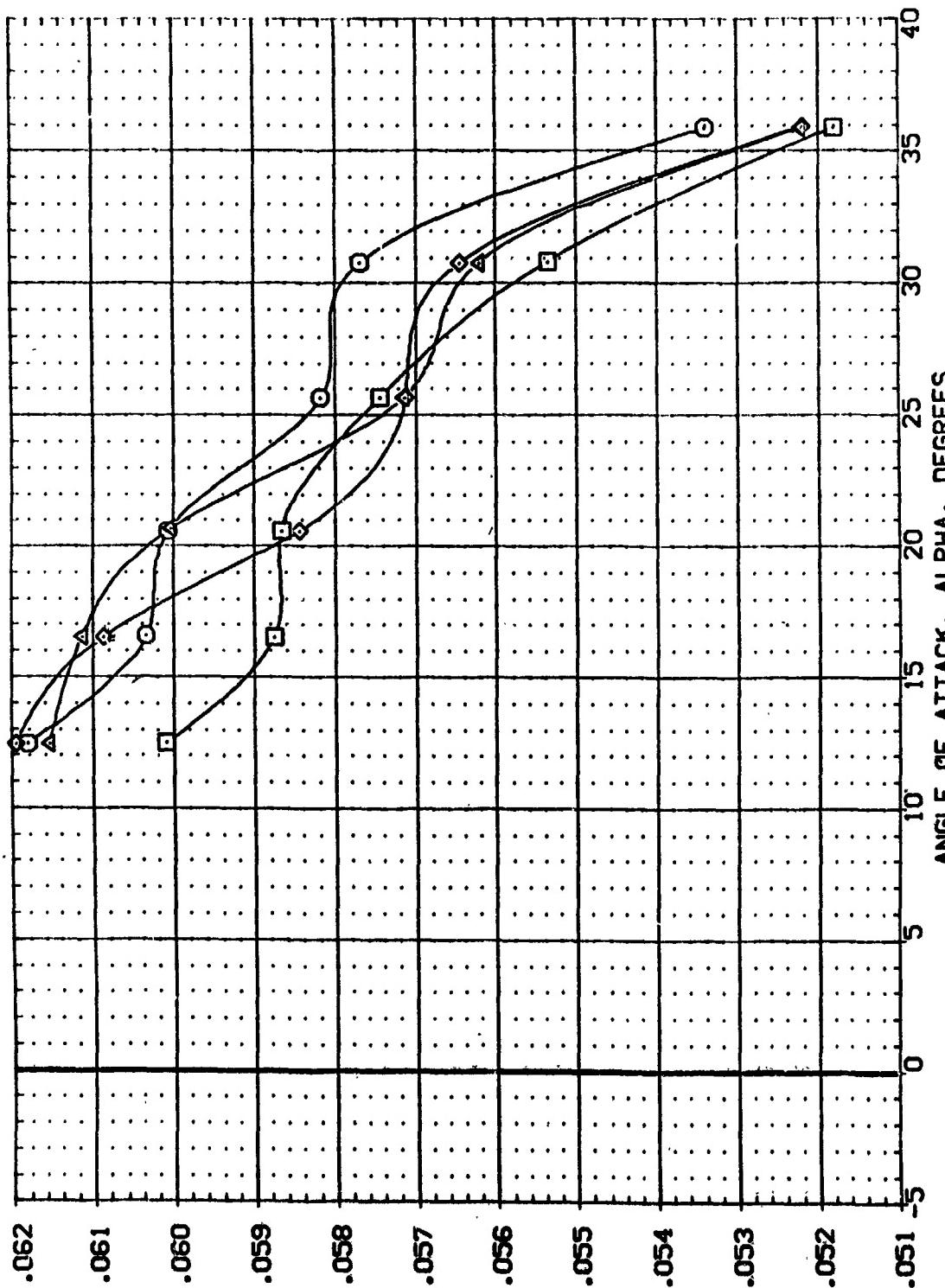


DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CPN031)	O	MA-7, UPNT 1031, ROCKWELL PRR ORB.
(CPN030)	□	MA-7, UPNT 1031, ROCKWELL PRR ORB.
(CPN032)	△	MA-7, UPNT 1031, ROCKWELL PRR ORB.
(CPN033)	◇	MA-7, UPNT 1031, ROCKWELL PRR ORB.

REFERENCE INFORMATION

SREF	.7245	SO. FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XMRP	12.5610	-
YMRP	.3000	-
ZMRP	6.0000	-
SCALE	.0150	-



AXIAL FORCE COEFFICIENT, CA

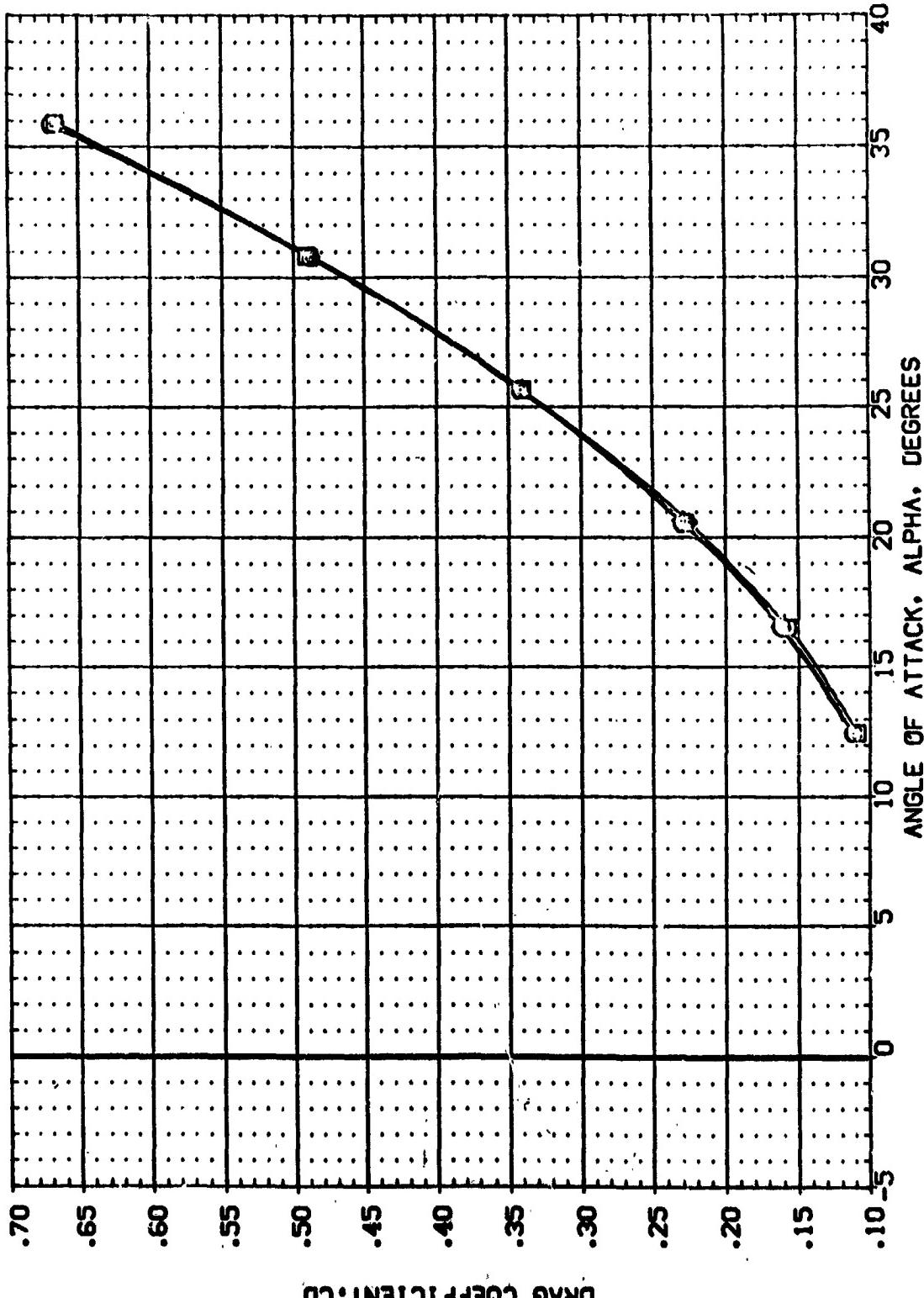
### EFFECT OF YAW ANGLE (JET ON)

MACH = 4.00

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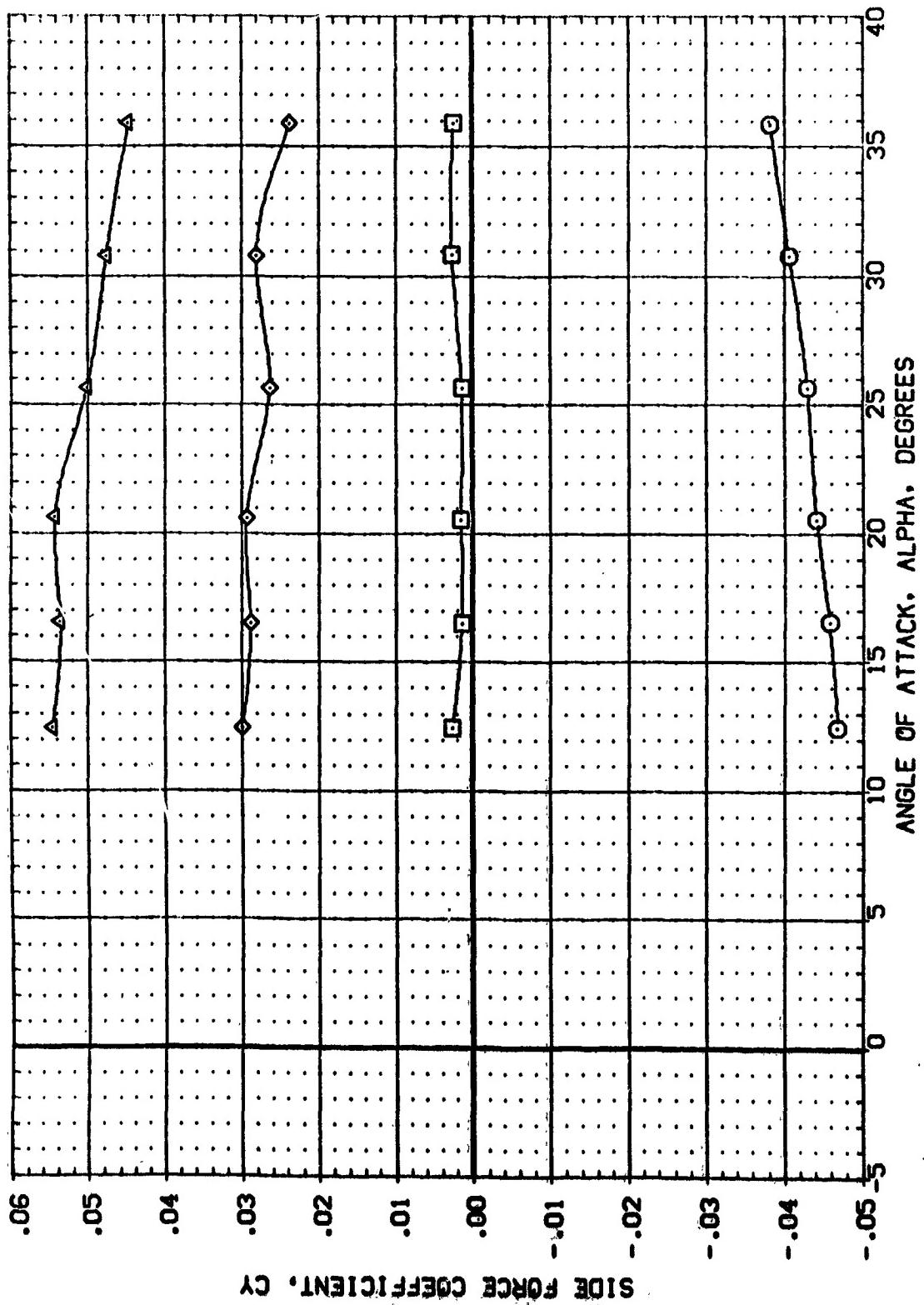
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP031) O MA-7 UPN 1031 ROCKWELL PER CDF.  
 (CP030) X MA-7 UPN 1031 ROCKWELL PER CDF.  
 (CP032) X MA-7 UPN 1031 ROCKWELL PER CDF.  
 (CP033) X MA-7 UPN 1031 ROCKWELL PER CDF.

REFERENCE INFORMATION  
 SREF .7245 SO.11  
 UREF 7.8828 INCFS  
 BREF 15.1152 INCFS  
 XTRP 12.9510 INCFS  
 YTRP .0000 INCFS  
 ZTRP 6.0000 INCFS  
 SCALE .0150



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CPM031) MA-7, UPN 1031, ROCKWELL PRR, DBB, CONF: BMTN1  
 (CPM030) MA-7, UPN 1031, ROCKWELL PRR, DBB, CONF: BMTN1  
 (CPM032) MA-7, UPN 1031, ROCKWELL PRR, DBB, CONF: BMTN1  
 (CPM033) MA-7, UPN 1031, ROCKWELL PRR, DBB, CONF: BMTN1

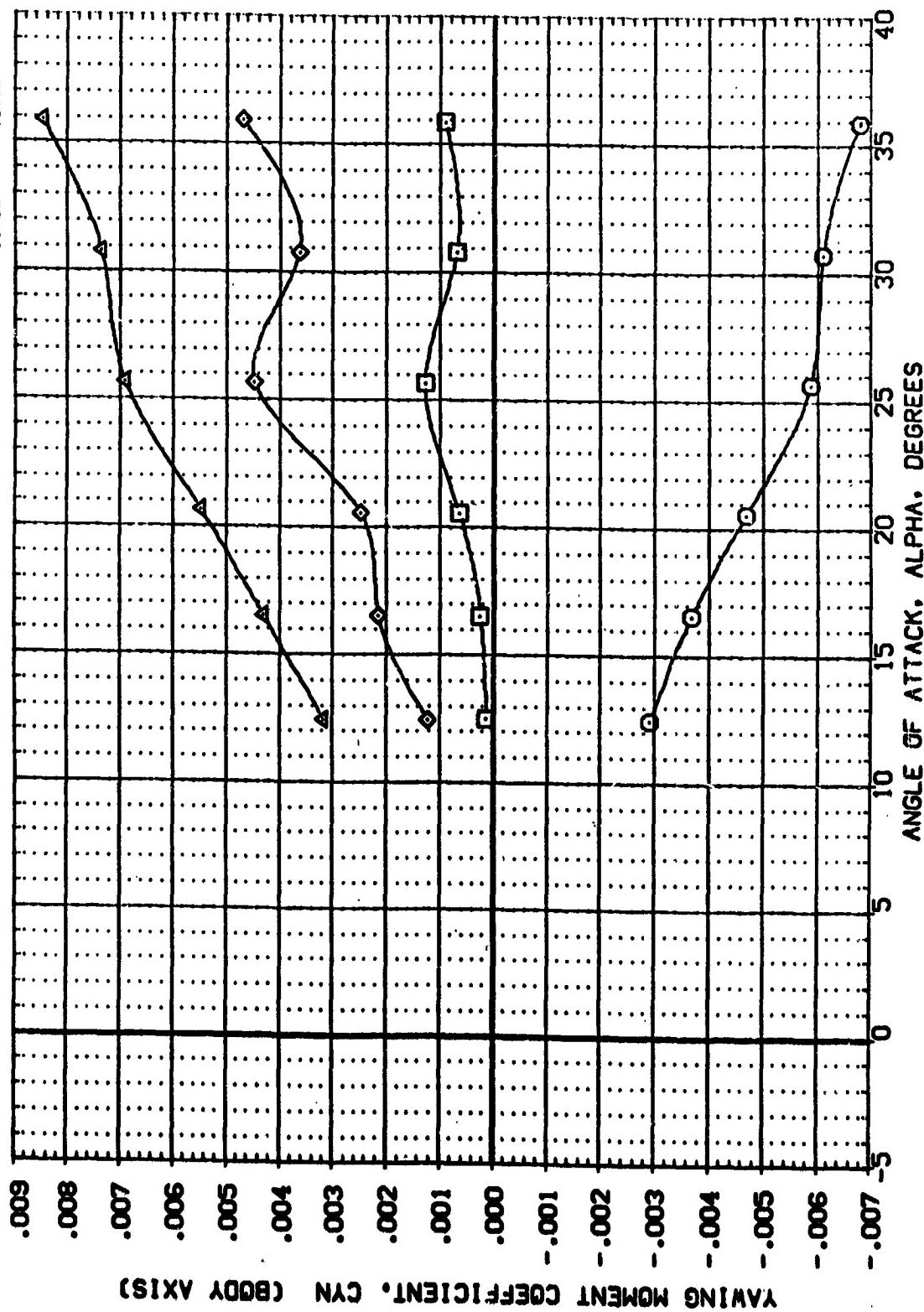
REFERENCE INFORMATION  
 SPREF 7245 SC.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0150 INCHES  
 SCALE



EFFECT OF YAW ANGLE (JET ON)  
 (A) MACH = 4.00

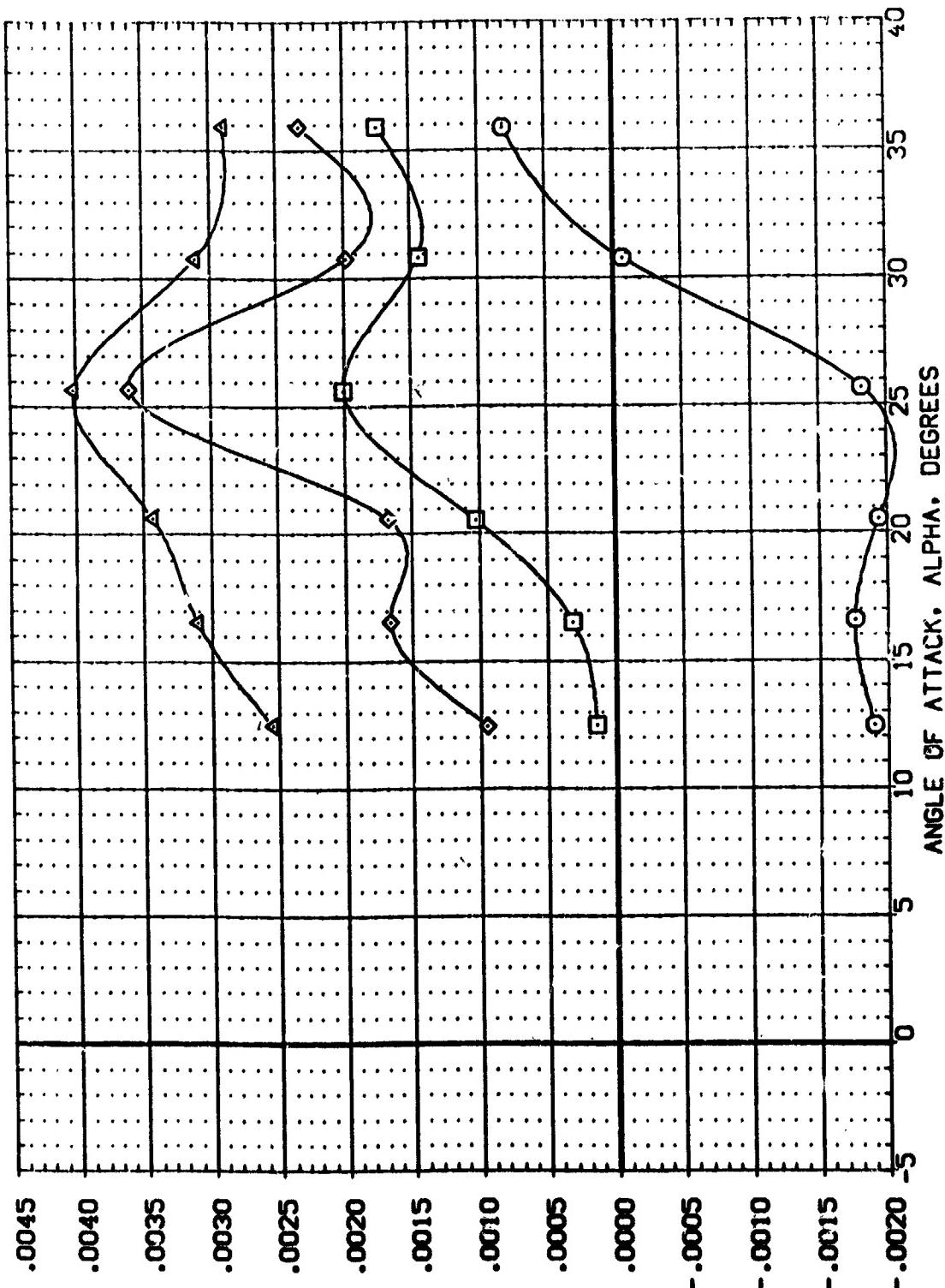
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CPH031) MA-7, UPN 1031, ROCKWELL PRR 088. CONF. BMTNI  
 (CPH032) MA-7, UPN 1031, ROCKWELL PRR 088. CONF. BMTNI  
 (CPH033) MA-7, UPN 1031, ROCKWELL PRR 088. CONF. BMTNI  
 (CPH034) MA-7, UPN 1031, ROCKWELL PRR 088. CONF. BMTNI

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8928 INCHES  
 GREF 15.152 INCHES  
 XTRP 12.9510 INCHES  
 YTRP 6.0000 INCHES  
 ZTRP .0150 SCALE



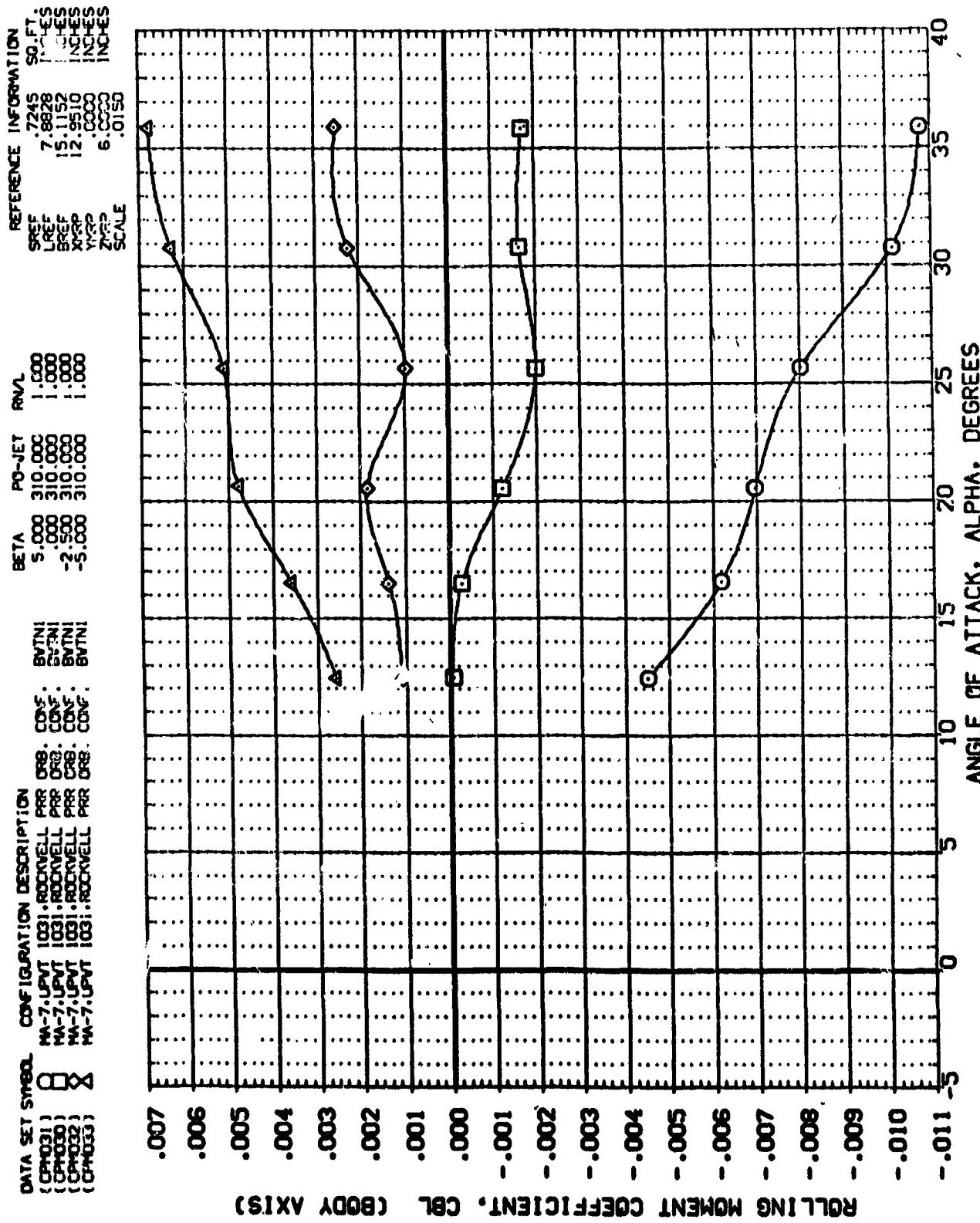
EFFECT OF YAW ANGLE (JET 0n)  
 (MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP-031) MA-7, UPN 1031, ROCKWELL PRR ORB. CONF. BUNI  
 (CP-030) MA-7, SPN 1031, ROCKWELL PRR ORB. CONF. BUNI  
 (CP-032) MA-7, SPN 1031, ROCKWELL PRR ORB. CONF. BUNI  
 (CP-033) MA-7, UPN 1031, ROCKWELL PRR ORB. CONF. BUNI  
 REFERENCE INFORMATION  
 SREF .7215 SOFT  
 LREF 7.8838 INFLS  
 BREF 15.1152 INFLS  
 XNRP 12.5000 INFLS  
 ZNRP 6.0000 INFLS  
 SCALE .0000



EFFECT OF YAW ANGLE (JET ON)  
 $(\text{MACH} = 4.00)$

EFFECT OF YAW ANGLE (JET ON)  
 $(\alpha_{MACH} = 4.00$

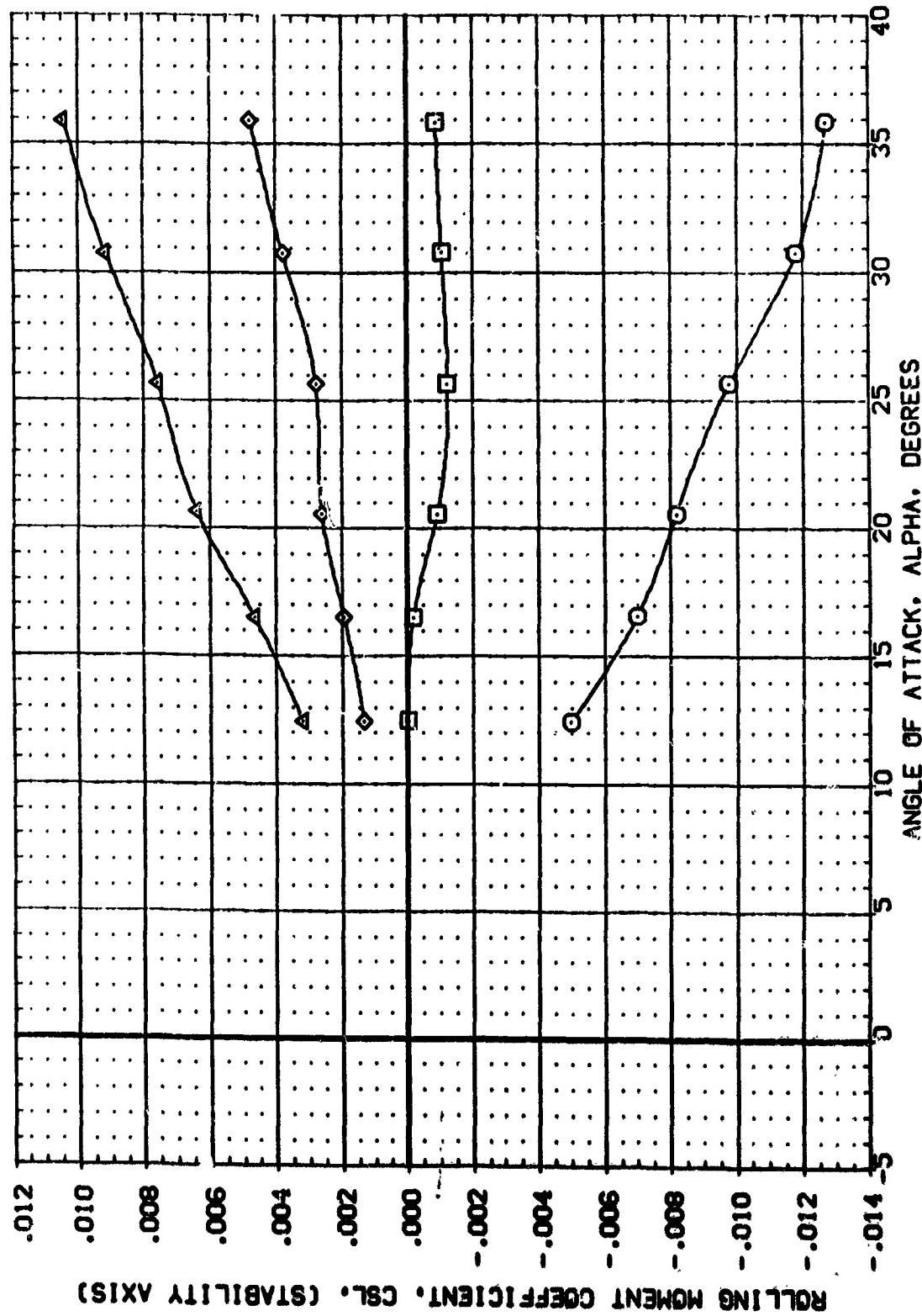


DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CNS01)	MA-7-JET	1031	RECKWELL	PR	CAB.	CONF:	BVTN1
(CNS02)	MA-7-JET	1031	RECKWELL	PR	CAB.	CONF:	BVTN1
(CNS03)	MA-7-JET	1031	RECKWELL	P2P	CAB.	CONF:	BVTN1
(CNS04)	MA-7-JET	1031	RECKWELL	P2P	CAB.	CONF:	BVTN1
(CNS05)	MA-7-JET	1031	RECKWELL	PR	CAB.	CONF:	BVTN1

REFERENCE INFORMATION

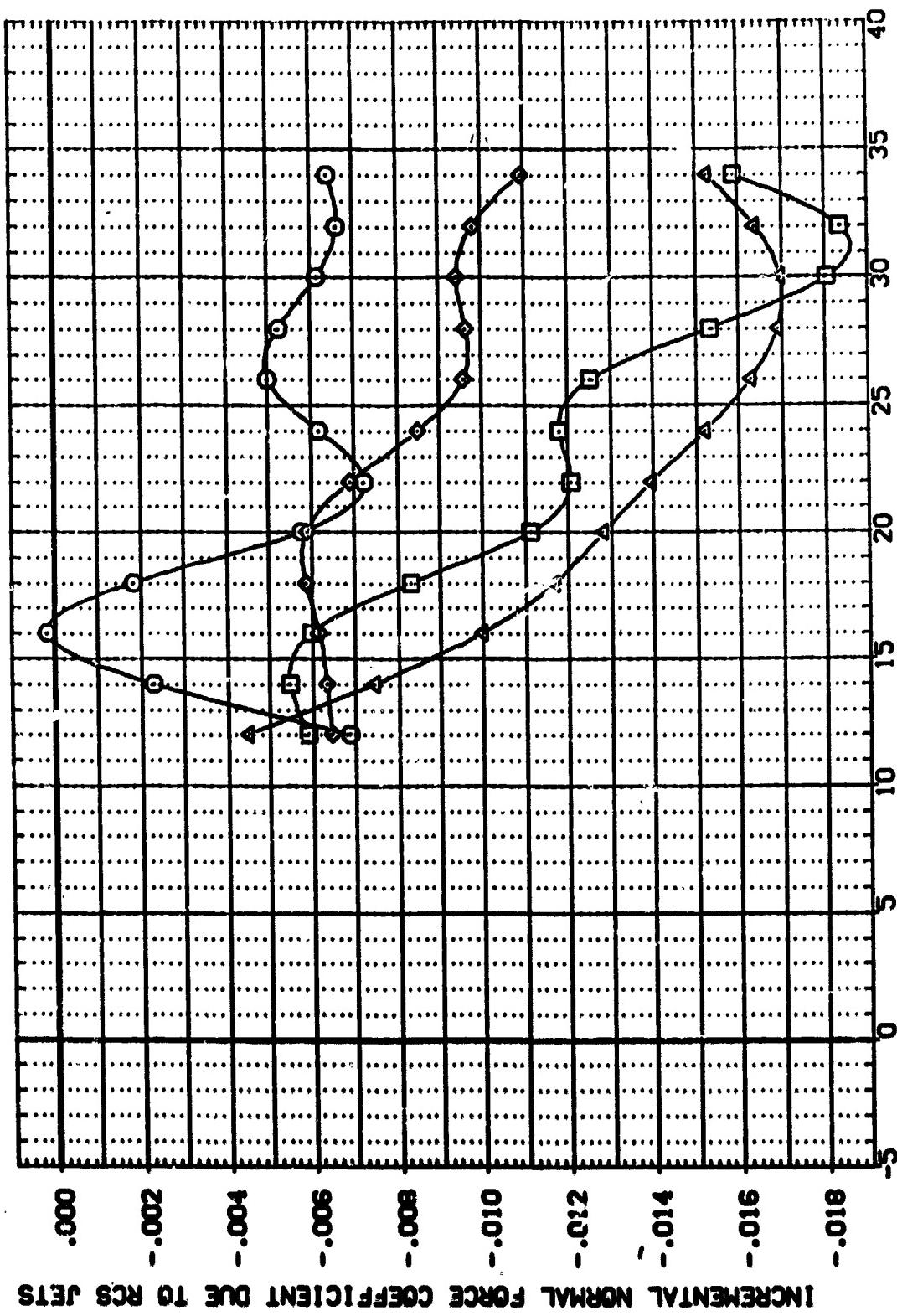
SREF	.7245	SC. FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XRP	12.9510	INCHES
YRP	6.0000	INCHES
ZRP	.0150	INCHES
SCALE		



EFFECT OF YAW ANGLE (JET ON)  
 $(MACH = 4.00)$

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BET <sub>A</sub>	D.PC-J	R <sub>UL</sub>
(APR026)	NA-7.507 1001. ROCKWELL RCS. COF.	.000	.35.000	1.000
(APR027)	NA-7.507 1001. ROCKWELL RCS. COF.	.000	.188.000	1.000
(APR028)	NA-7.507 1001. ROCKWELL RCS. COF.	.000	.310.000	1.000
(APR029)	NA-7.507 1001. ROCKWELL RCS. COF.	.030	.600.000	1.000

REFERENCE INFORMATION	
SREF	7215 SC FT
LREF	7.8828 INCHES
BREF	15.1132 INCHES
XTRP	12.9511 INCHES
ZTRP	6.0000 INCHES
SCALE	.5153



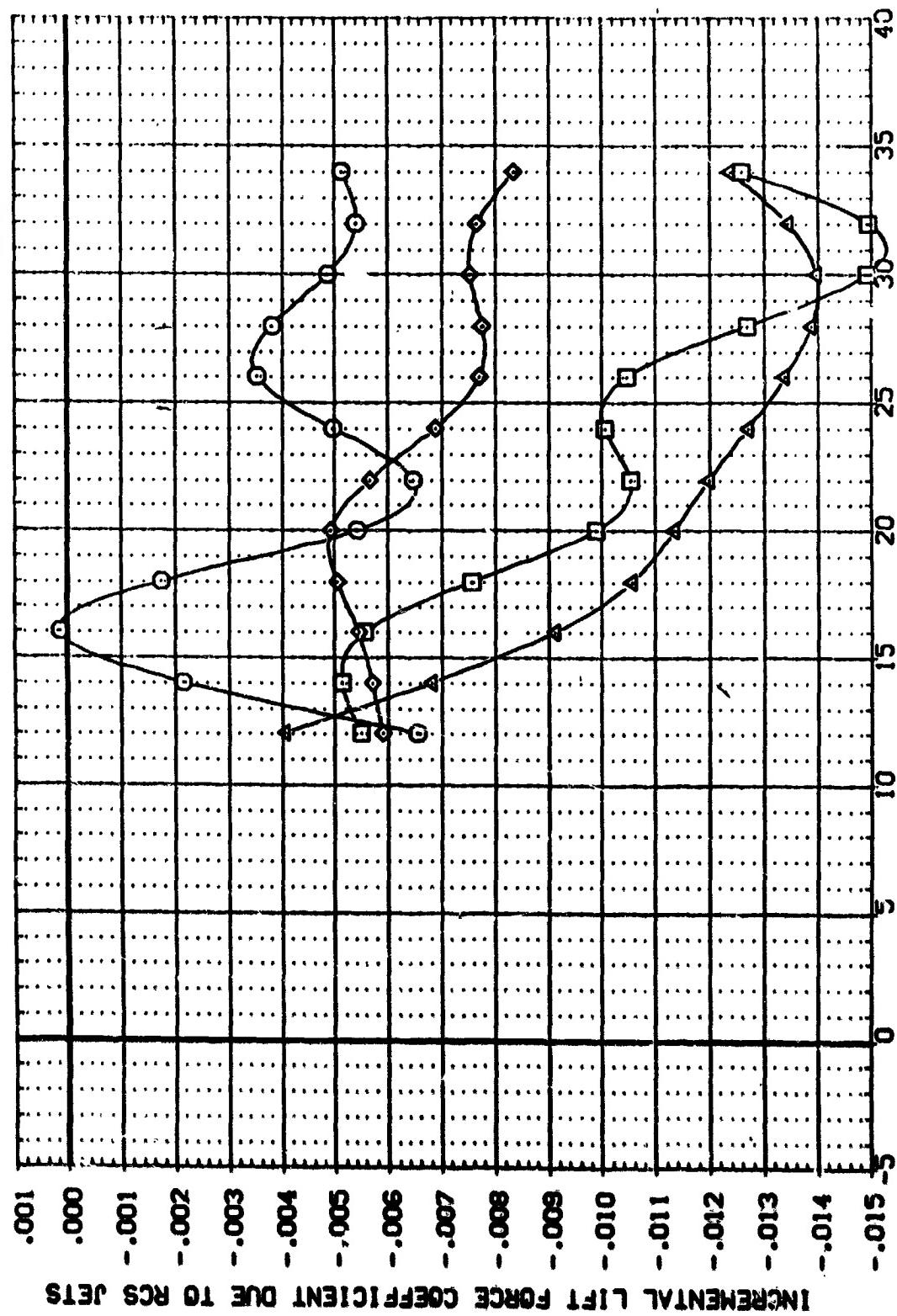
YAW JET INTERFERENCE (INCREMENTAL DATA). EFFECT OF JET PRESSURE  
(A)MACH = 4.00

DATA SET SUMMARY CONFIGURATION DESCRIPTION

MA-7, UPN 1031	ROCKWELL PRR OB8	CONF. 1	BVTN1
MA-7, UPN 1031	ROCKWELL PRR OB8	CONF. 2	BVTN1
MA-7, UPN 1031	ROCKWELL PRR OB8	CONF. 3	BVTN1
MA-7, UPN 1031	ROCKWELL PRR OB8	CONF. 4	BVTN1

REFERENCE INFORMATION

SREF	.7245
LRF	7.9828
BRF	15.1592
XRP	12.6610
YRP	6.8000
ZRP	6.3130
SCALE	



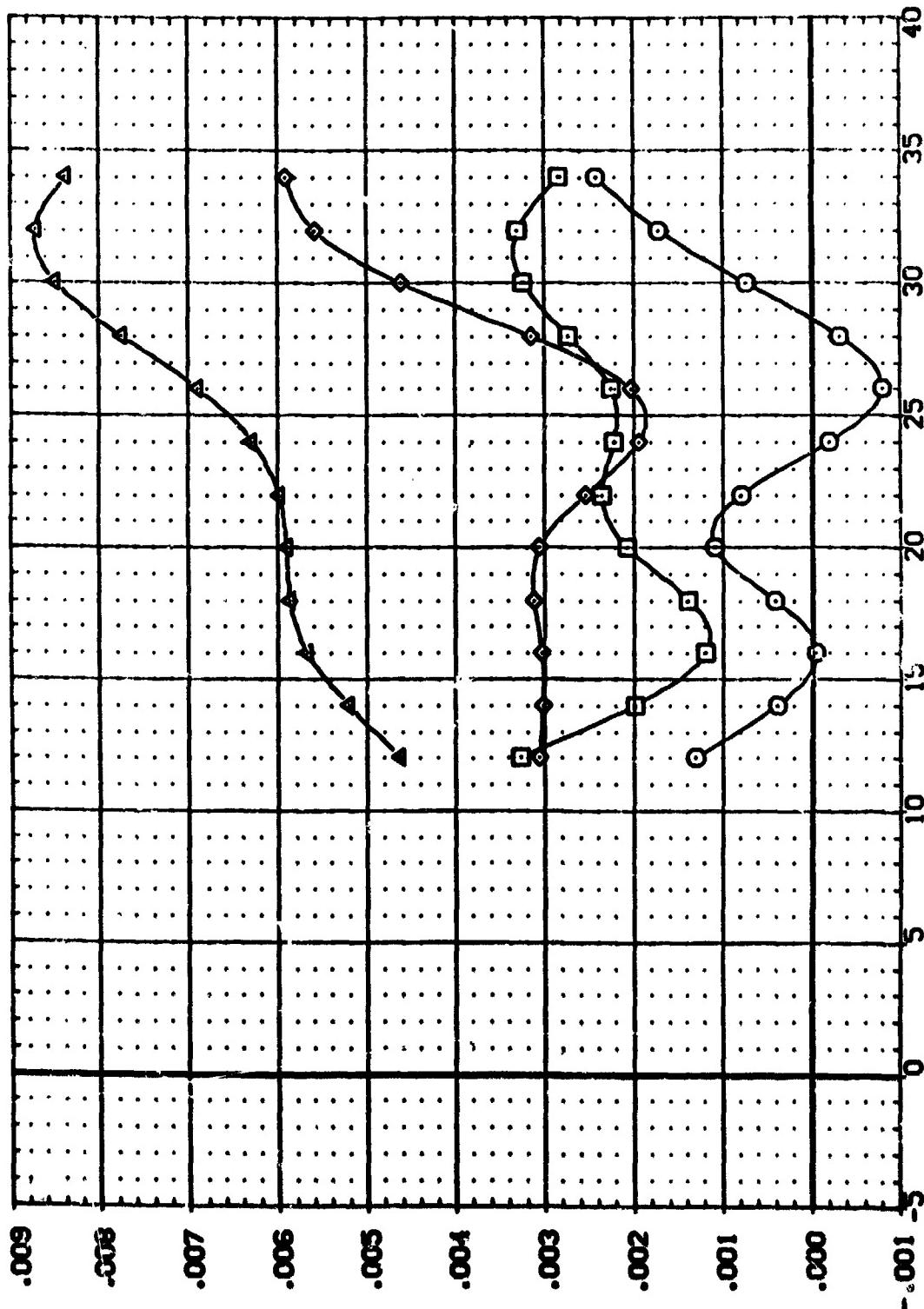
YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET PRESSURE  
C2MACH = 4.00

DATA SET STAB. CONFIGURATION DESCRIPTION

(AP026)	MA-7.5PT	1031: ROCKWELL	PFR	CDF.	BUTN
(AP029)	MA-7.5PT	1031: ROCKWELL	PFR	CDF.	BUTN
(AP031)	MA-7.5PT	1031: ROCKWELL	PFR	CDF.	BUTN
(AP035)	MA-7.5PT	1031: ROCKWELL	PFR	CDF.	BUTN

REFERENCE INFORMATION

SREF	.7245	SD.FT.
LREF	7.8828	INCHES
SREF	15.1152	INCHES
XREF	12.9510	INCHES
YREF	6.0000	INCHES
ZREF	6.0150	INCHES



INCREMENTAL PITCHING MOMENT COEFFICIENT DUE TO RCS JETS

YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET PRESSURE  
C(MACH) = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

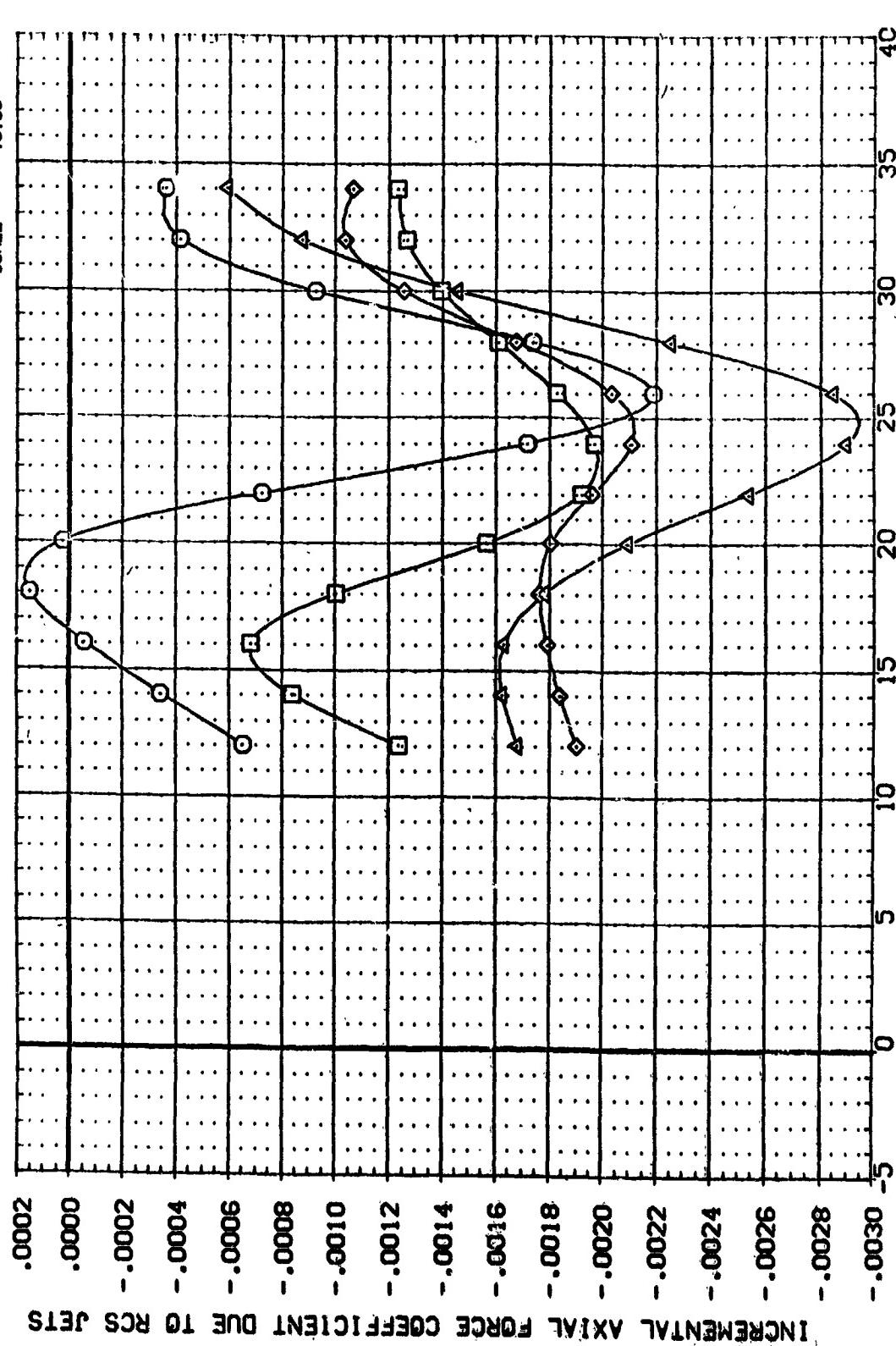
APM026	□	MA-7, UPVT	1031, ROCKWELL	PRR	CRB.	CONF:	BWTN1
APM029	○	MA-7, UPVT	1031, ROCKWELL	PRR	CRB.	CONF:	BWTN1
APM03C	△	MA-7, UPVT	1031, ROCKWELL	PRR	CRB.	CONF:	BWTN1
APM035	◊	MA-7, UPVT	1031, ROCKWELL	PRR	CRB.	CONF:	BWTN1

BETA DLP0-J RNL

.000	.35.000	1.000
.000	.18.000	1.000
.000	.31.000	1.000
.000	.60.000	1.000

REFERENCE INFORMATION

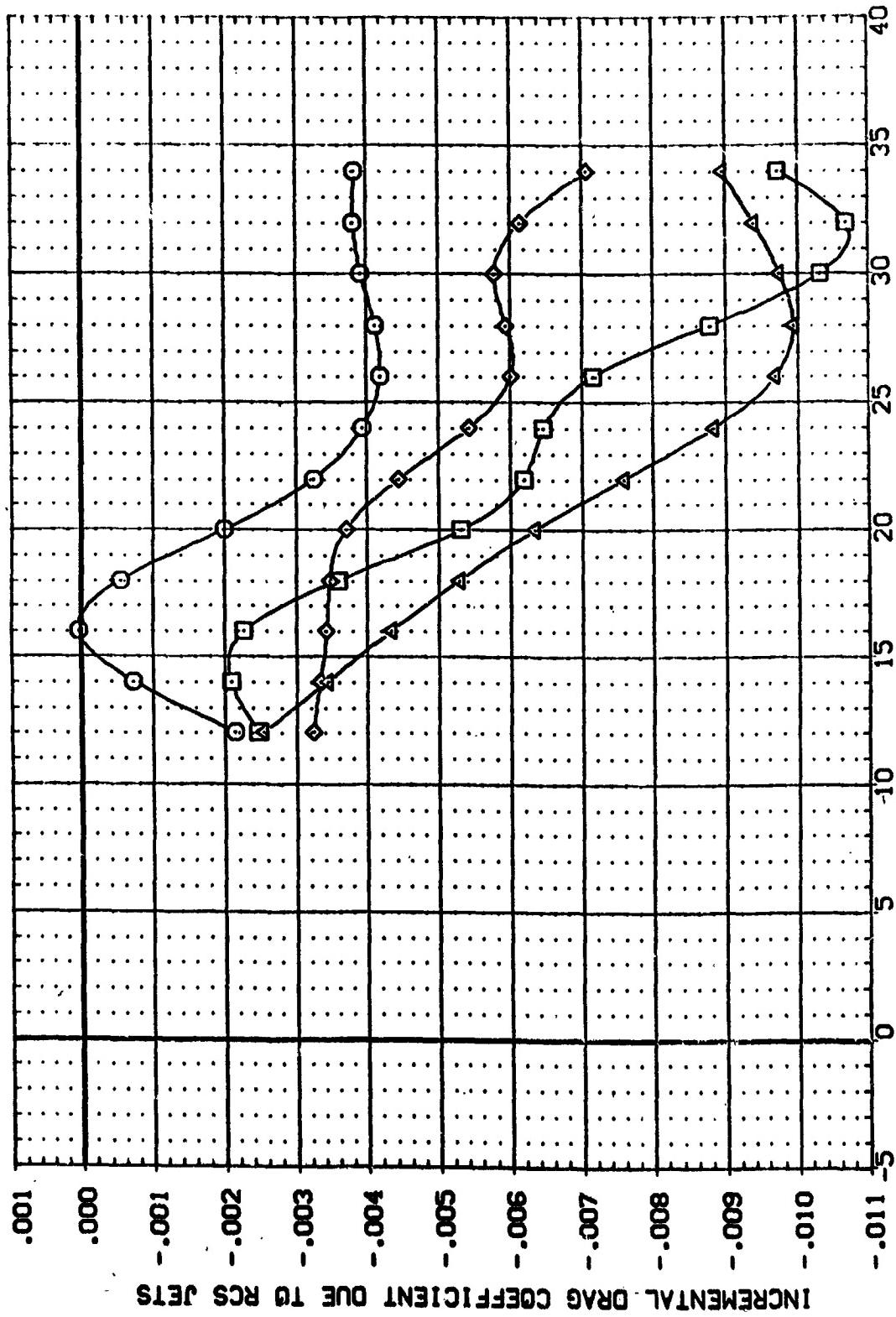
SREF	.7245	SC. FT.
LREF	.7.8828	INCHES
BREF	15.1152	INCHES
XRP	12.9510	INCHES
YRP	.0000	INCHES
ZRP	6.0030	INCHES
SCALE	.0150	



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET PRESSURE  
CAFMACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APR026) MA-7, JPT, 1031, ROCKWELL PRB, CONF.: BVTN1  
 (APR029) MA-7, JPT, 1031, ROCKWELL PRB, CONF.: BVTN1  
 (APR030) MA-7, JPT, 1031, ROCKWELL PRB, CONF.: BVTN1  
 (APR031) MA-7, JPT, 1031, ROCKWELL PRB, CONF.: BVTN1  
 (APR035) MA-7, JPT, 1031, ROCKWELL PRB, CONF.: BVTN1

REFERENCE INFORMATION  
 SREF .7245 SC. FT.  
 LREF 7.8828 INCHES  
 BREF 15.152 INCHES  
 XFRP 12.9570 INCHES  
 YFRP 6.0000 INCHES  
 ZFRP 6.0000 INCHES  
 SCALE .0150



INCREMENTAL DRAG COEFFICIENT DUE TO RCS JETS

YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET PRESSURE  
 $(\text{C}_M \text{MACH}) = 4.00$

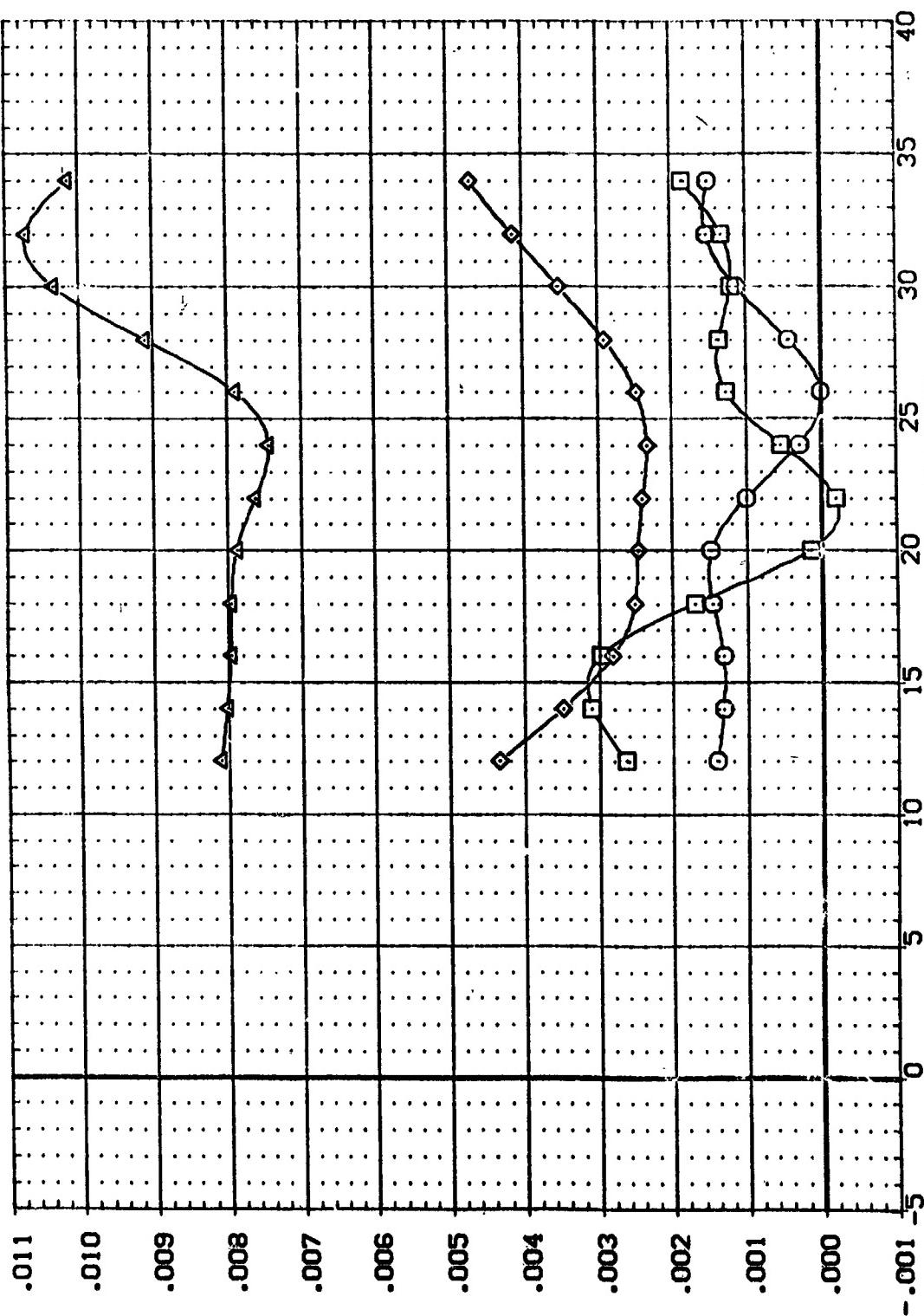
DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APM026)	□	MA-7, UP/1	1031, ROCKWELL	PRR	GRB.	CONF:	BVNTN1
(APM029)	○	MA-7, UP/1	1031, ROCKWELL	PRR	GRB.	CONF:	BVNTN1
(APM030)	△	MA-7, UP/1	1031, ROCKWELL	PRR	GRB.	CONF:	BVNTN1
(APM035)	×	MA-7, UP/1	1031, ROCKWELL	PRR	GRB.	CONF:	BVNTN1

REFERENCE INFORMATION

SREF	.7245	SQ.FT.
LREF	.7828	INCHES
BREF	15.1152	INCHES
XMRP	12.9510	INCHES
YMRP	.0000	INCHES
ZMRP	.0150	INCHES
SCALE	.0150	

INCREMENTAL SIDE FORCE COEFFICIENT DUE TO RCS JETS



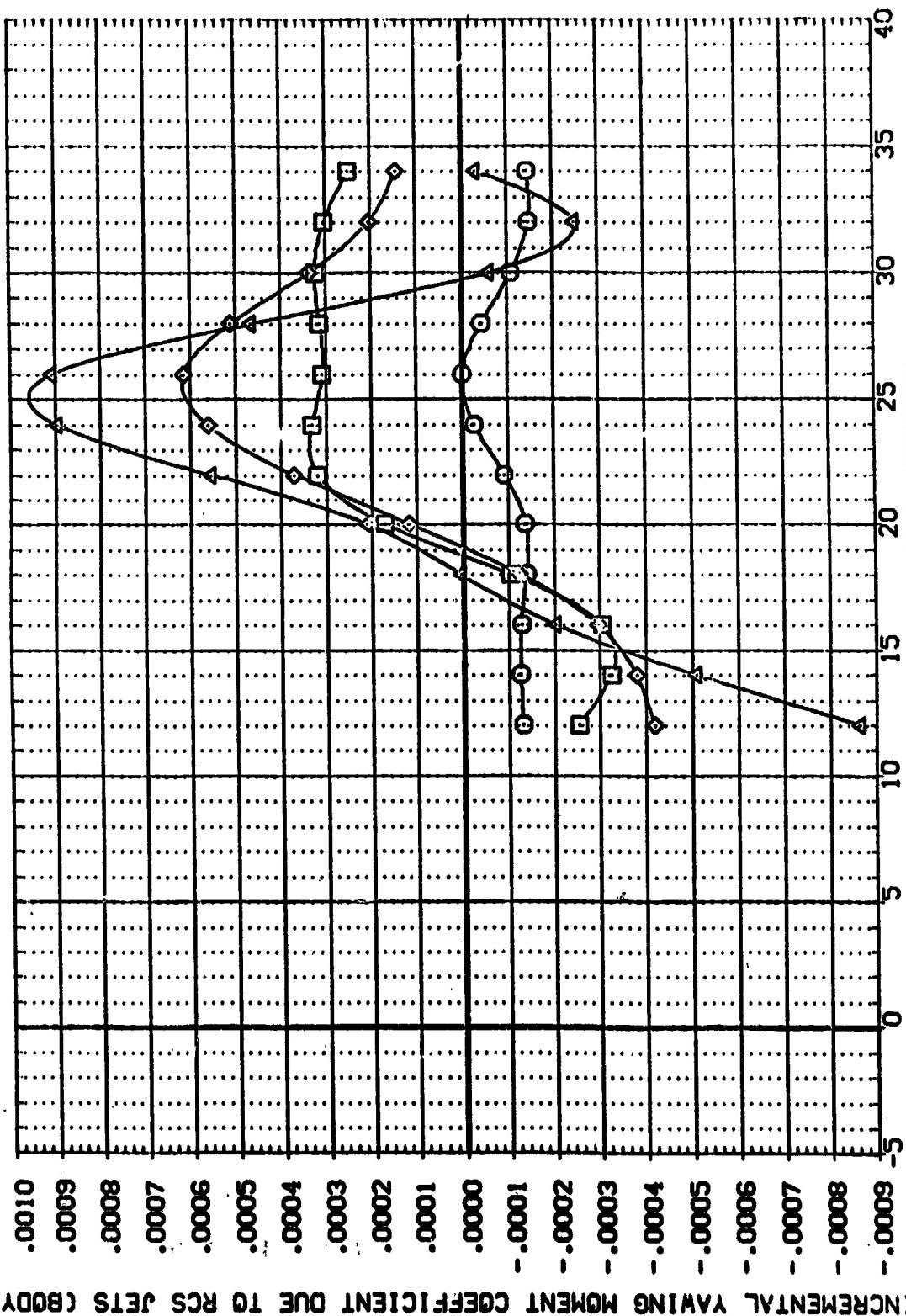
YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET PRESSURE  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL      CONFIGURATION DESCRIPTION

(APPROX)      MA-7. UPV 1031. ROLLIN PRR GRB. COEF.      BURNI  
 (APPROX)      MA-7. UPV 1031. ROLLIN PRR GRB. COEF.      BURNI  
 (APPROX)      MA-7. SPG 1031. ROLLIN PRR GRB. COEF.      BURNI  
 (APPROX)      MA-7. JPV 1031. ROLLIN PRR GRB. COEF.      BURNI

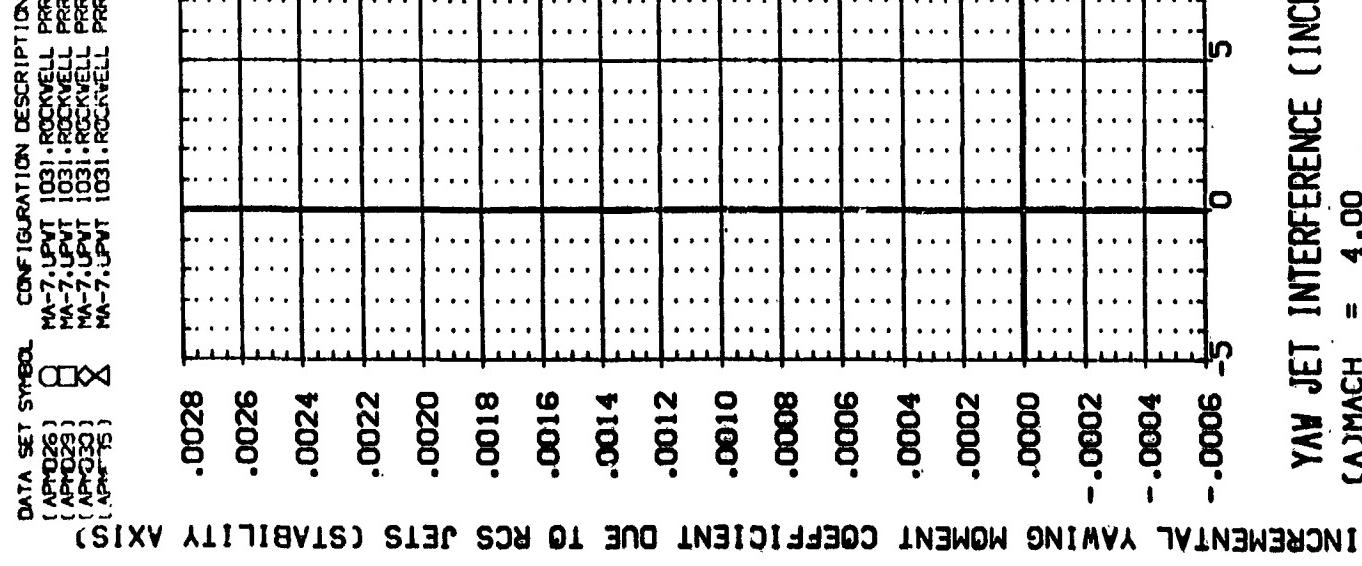
REFERENCE INFORMATION

SREF	.725	SC FT.
LREF	7.883	SC FT.
BREF	15.152	SC FT.
XMRP	1.2	SC FT.
YMRP	6.222	SC FT.
ZMRP	6.222	SC FT.
SCALE	.015	



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET PRESSURE

(A)MACH = 4.00



DATA SET SYMBOL CONFIGURATION DESCRIPTION  $\Delta C_{M,\text{YAW}}$   $\Delta C_{P,\text{YAW}}$   $\Delta C_{R,\text{YAW}}$

(AP026)	□	MA-7. UPWT 1031. ROCKWELL PRR ORB. CCGF. BYTN	.000	.35.000	1.000
(AP029)	○	MA-7. UPWT 1031. ROCKWELL PRR ORB. CCGF. BYTN	.000	.188.000	1.000
(AP030)	×	MA-7. UPWT 1031. ROCKWELL PRR ORB. CCGF. BYTN	.000	.310.000	1.000
(AP031)	×	MA-7. UPWT 1031. ROCKWELL PRR ORB. CCGF. BYTN	.000	.600.000	1.000

REFERENCE INFORMATION

SREF	.7225	SQ.FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XRP	12.9510	INCHES
YRP	6.0000	INCHES
ZRP	6.0000	INCHES
SCALE	.0150	

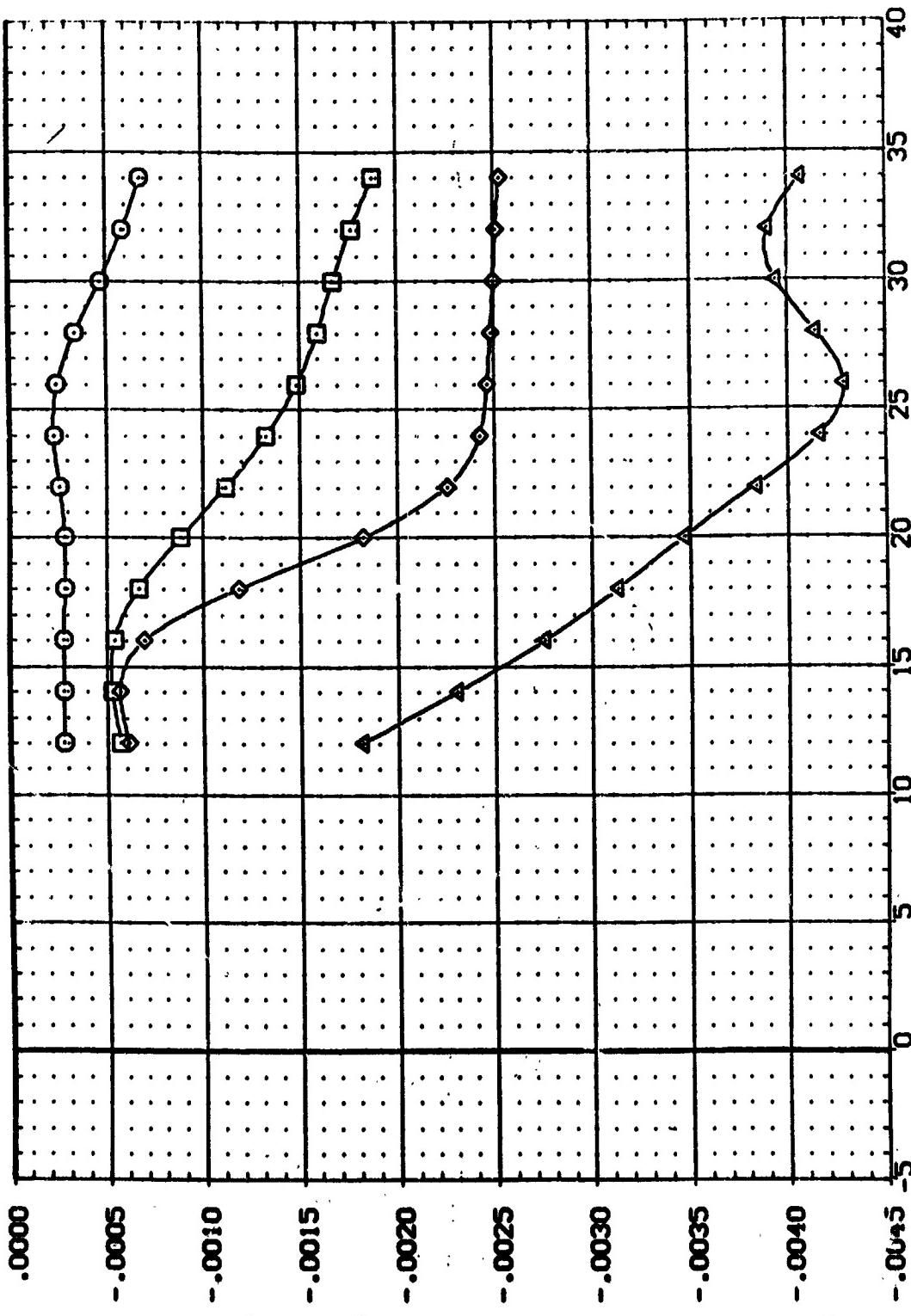
YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET PRESSURE

$C_{J,MACH} = 4.00$

INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS (BODY AXIS)

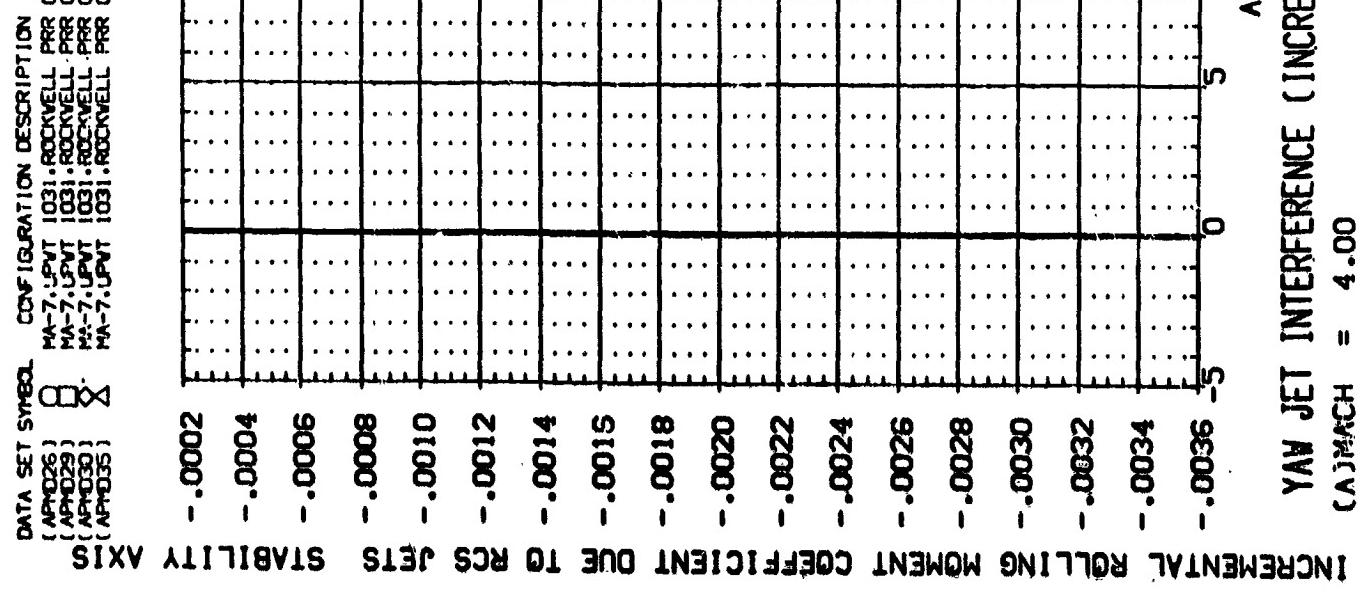
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APR026) O MA-7.1PNT 1031-ROCKWELL PR CONF.  
 (APR028) □ MA-7.1PNT 1031-ROCKWELL PR CONF.  
 (APR029) X MA-7.1PNT 1031-ROCKWELL PR CONF.  
 (APR030) ▲ MA-7.1PNT 1031-ROCKWELL PR CONF.  
 (APR035) △ MA-7.1PNT 1031-ROCKWELL PR CONF.

REFERENCE INFORMATION  
 SREF .7245 SQ.FT  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XHPP 12.9510 INCHES  
 YHPP 6.0000 INCHES  
 ZHPP 6.0000 INCHES  
 SCALE .0150



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET PRESSURE

MACH = 4.00



YAW JET INTERFERENCE (INCREMENTAL DATA). EFFECT OF JET PRESSURE  
 $(\alpha)_{MACH} = 4.00$

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REFERENCE INFORMATION

SREF	.7245	FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XMRP	12.9510	INCHES
YMRP	6.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

DATA SET SYMBOL CONFIGURATION DESCRIPTION

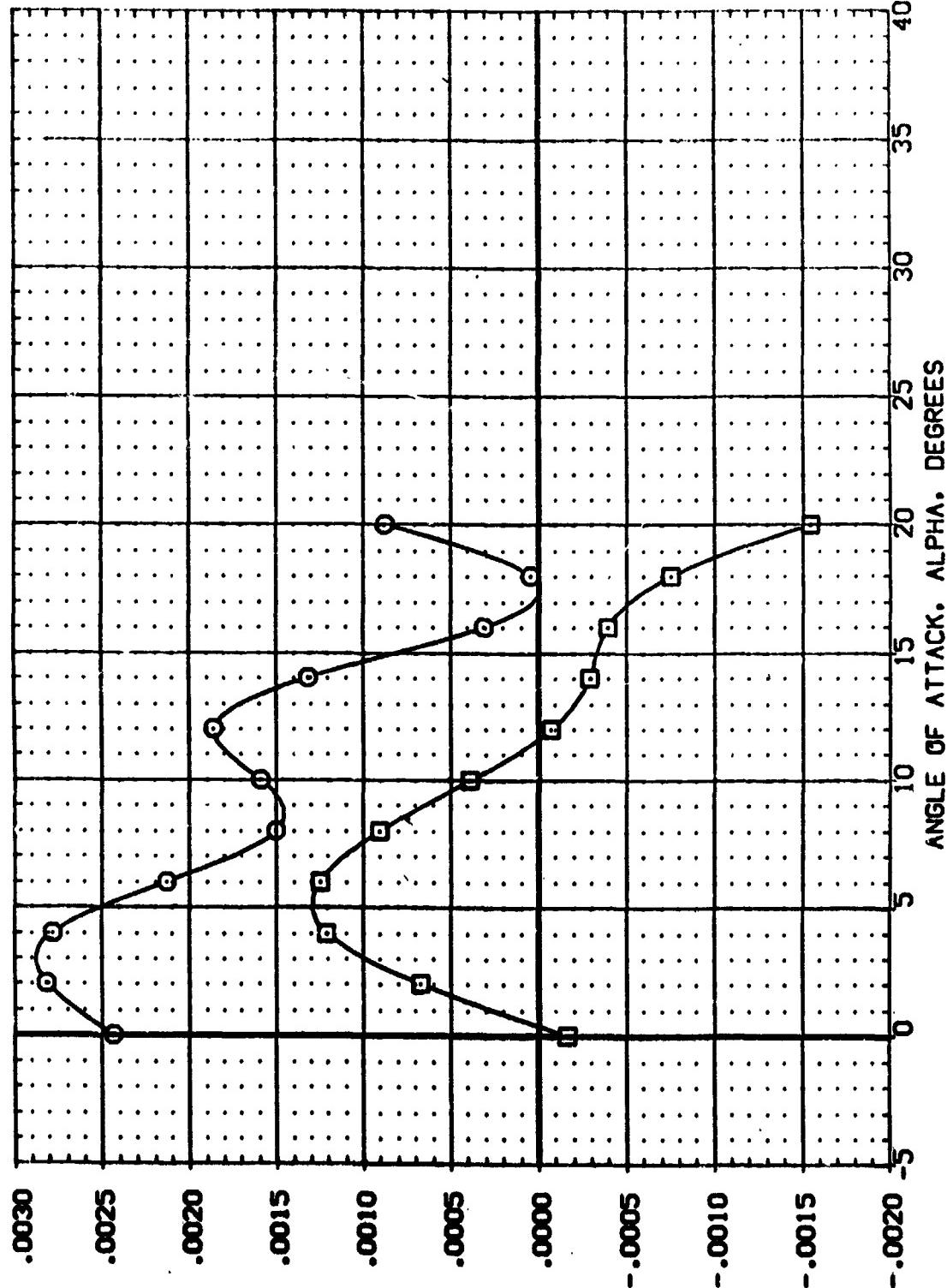
(APT026)	○	MA-7, UPN 1031, ROCKWELL FFR
(APT029)	□	MA-7, UPN 1031, ROCKWELL FFR
(APT030)	■	MA-7, UPN 1031, ROCKWELL FFR
(APT031)	◇	MA-7, UPN 1031, ROCKWELL FFR
(APT035)	△	MA-7, UPN 1031, ROCKWELL FFR

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APPD18) 8 MA-7. UPNT 1031. ROCKWELL FTR ORB. CONF.: BYNI BYNI

BETA DP0-J RAVL  
 -5.000 187.000 3.000

REFERENCE INFORMATION  
 SREF 7.7245 SO FT  
 LREF 7.3828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF 6.0000 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150

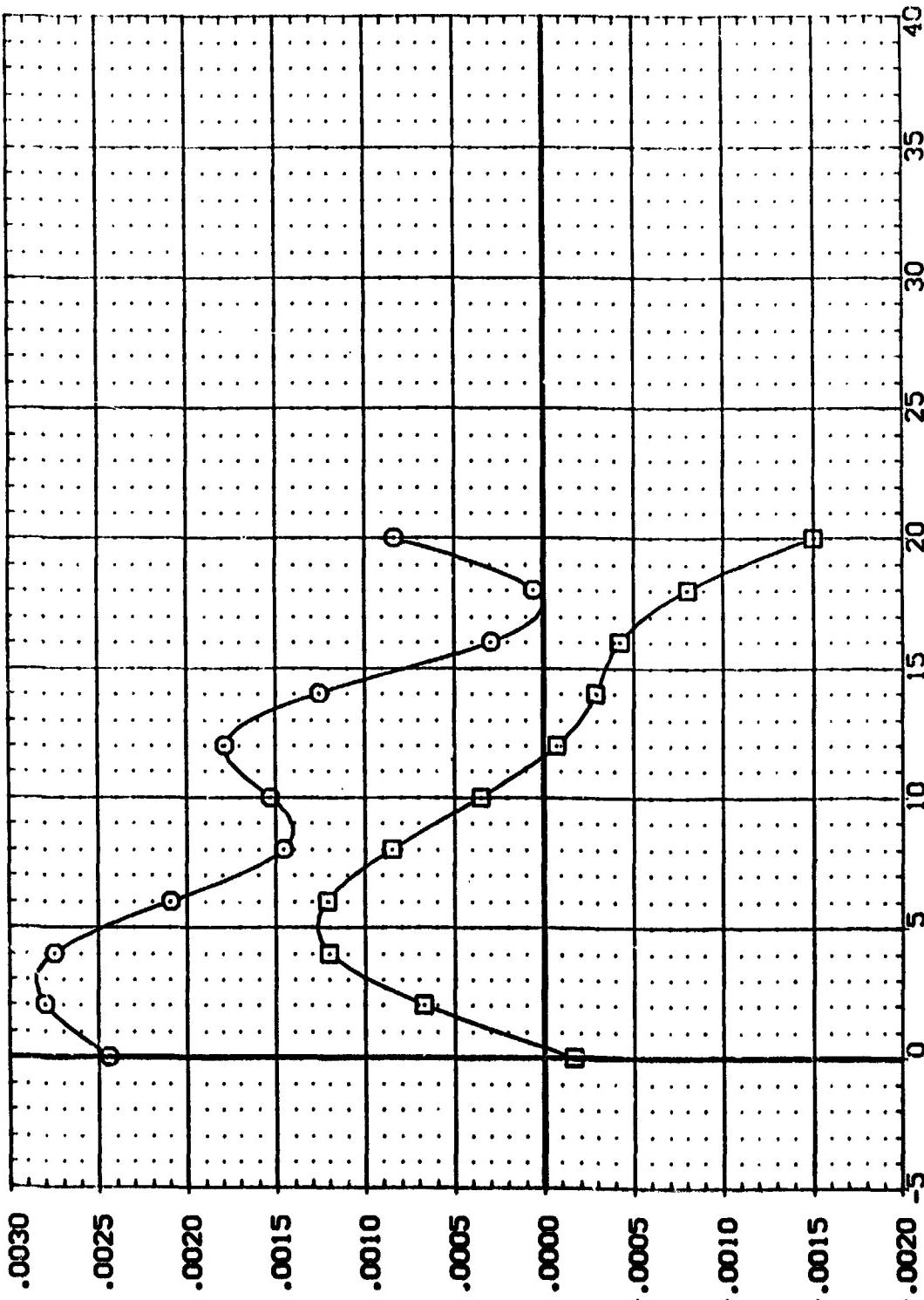
INCREMENTAL NORMAL FORCE COEFFICIENT DUE TO RCS JETS



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 $(\alpha)_MACH = 2.50$

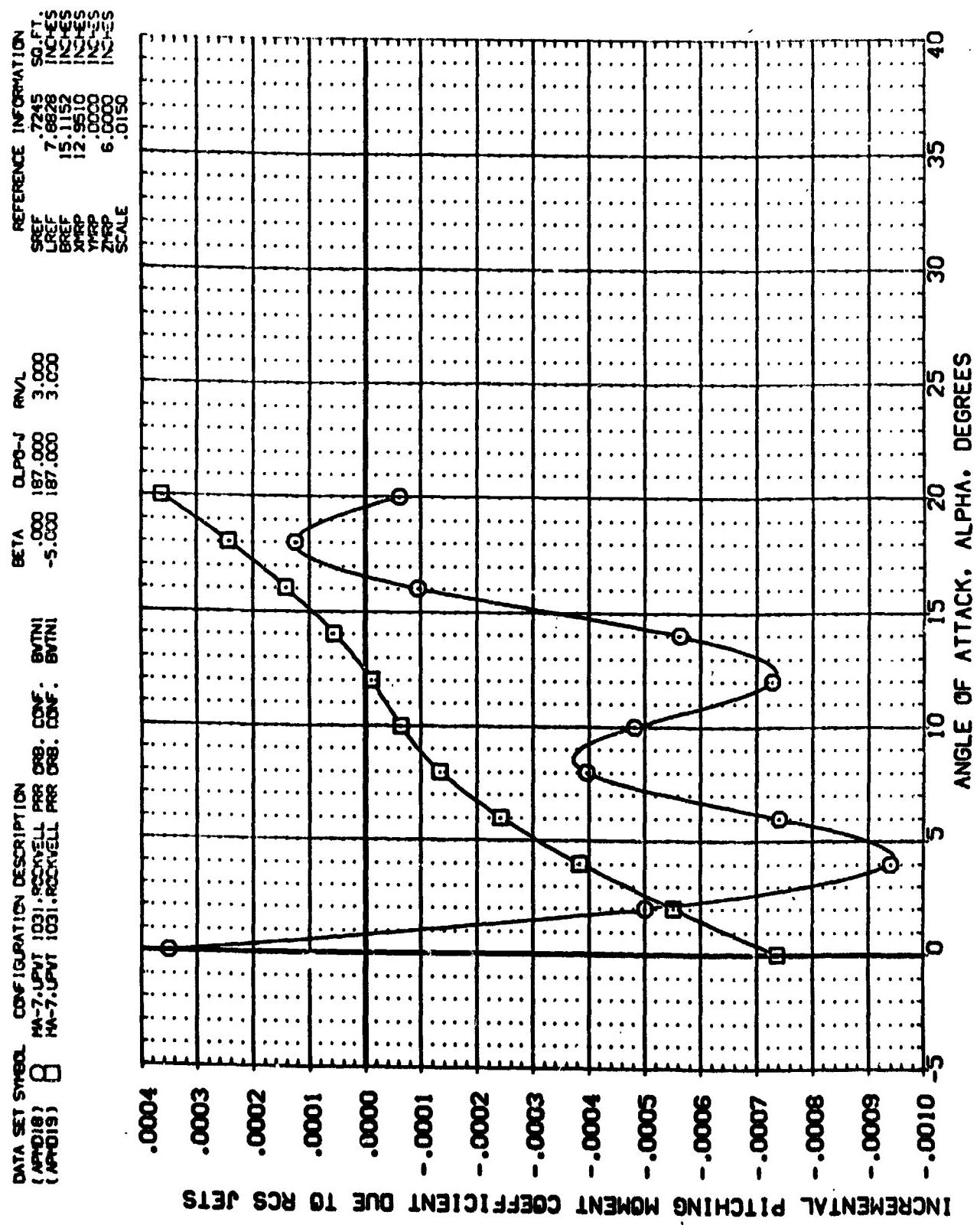
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
{APD018} 8 MA-7, UPNT 1031, ROCKWELL PER OBS. CONF.  
{APD019} 9 MA-7, UPNT 1031, ROCKWELL PER OBS. CONF.

REFERENCE INFORMATION  
SREF 7.7245 SQ.FT.  
LEEF 7.6828 INCHES  
BREF 15.1152 INCHES  
XREF 12.9510 INCHES  
YREF 6.0000 INCHES  
ZREF 6.0000 INCHES  
SCALE .0150

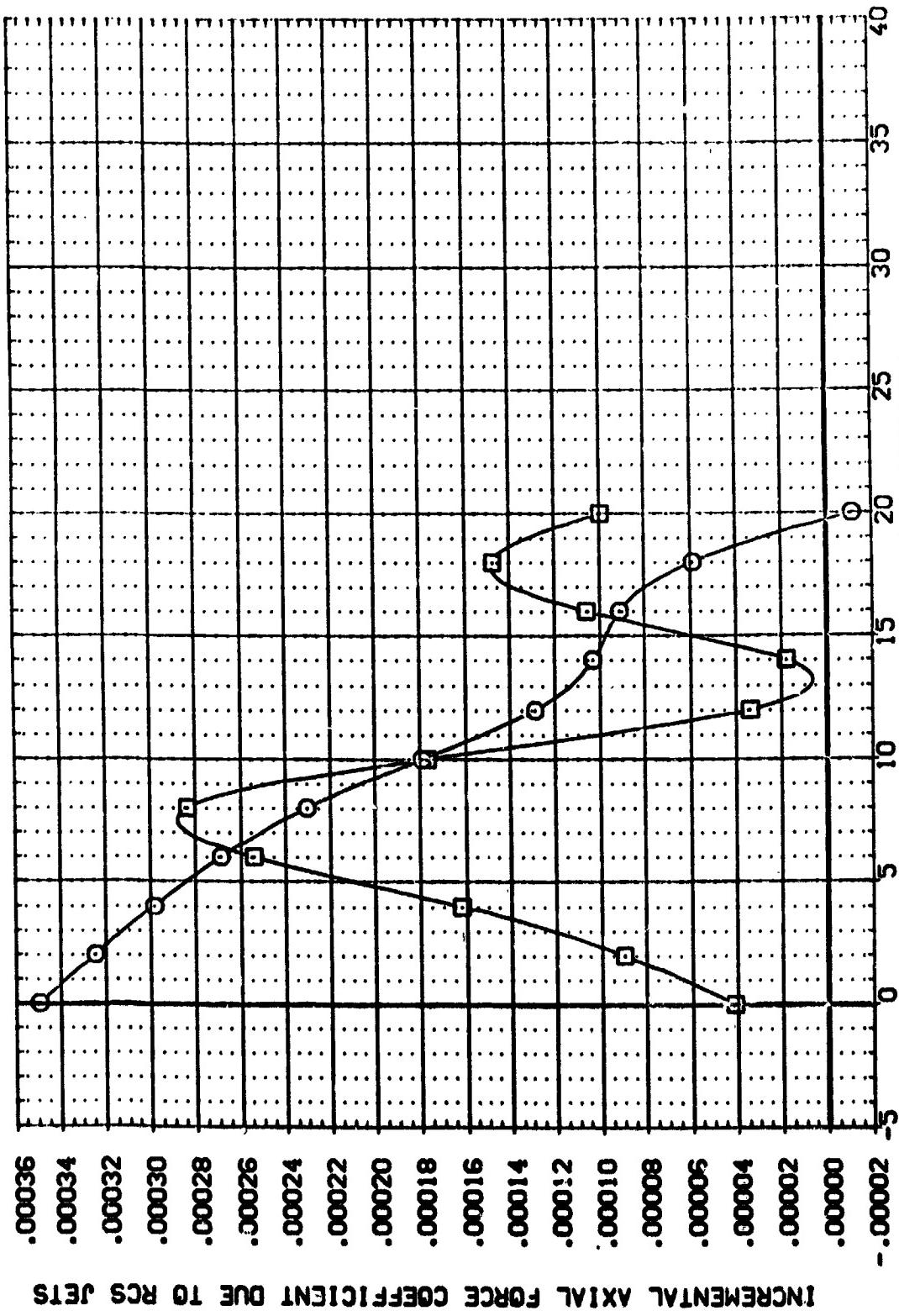


INCREMENTAL LIFT FORCE COEFFICIENT DUE TO RCS JETS

YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
( $\alpha_{MACH} = 2.50$ )



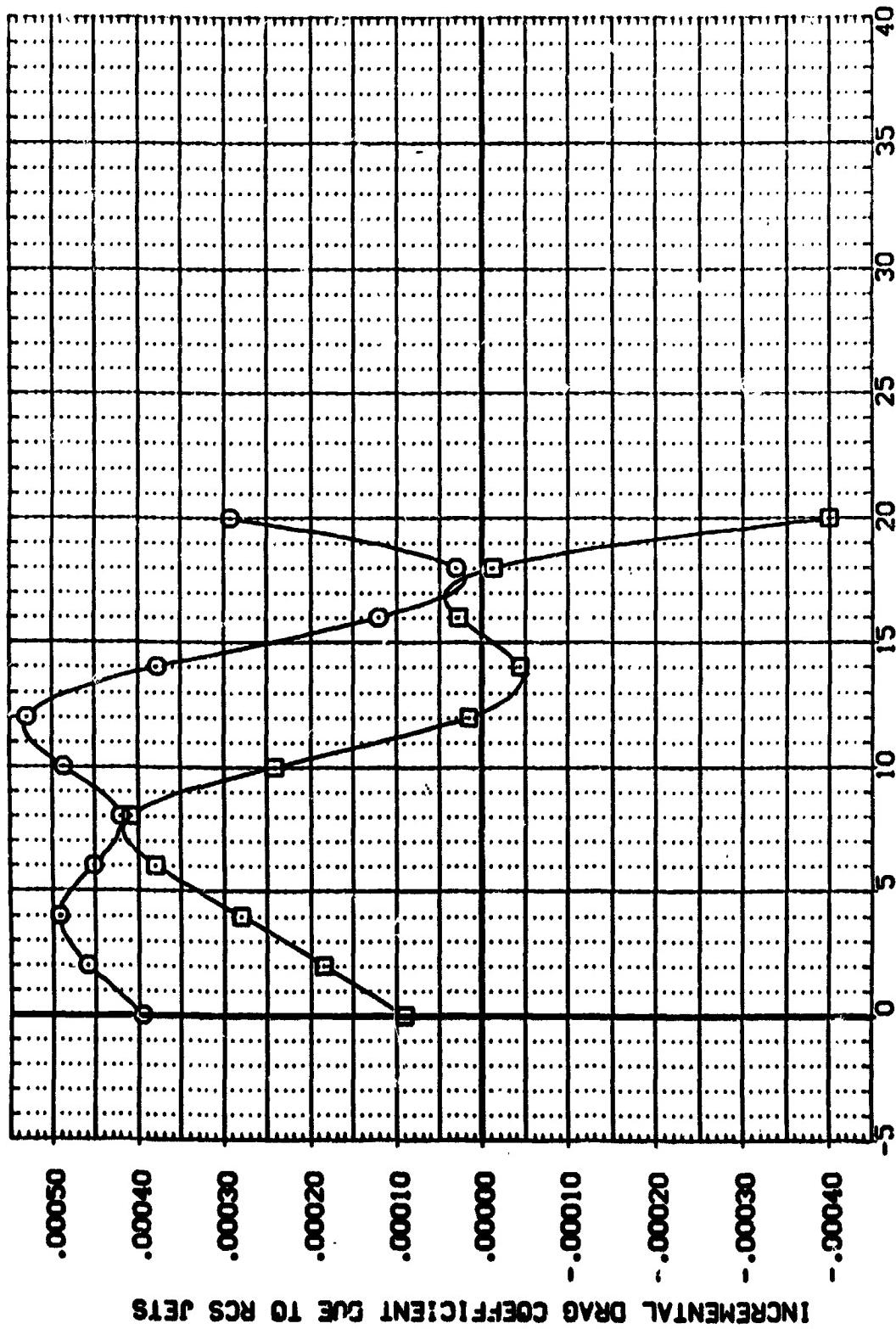
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (AFT018) 8 MA-7, UPW 1031, ROCKWELL PRR 088. CONF: BMTN  
 (AFT019) □ MA-7, UPW 1031, ROCKWELL PRR 088. CONF: BMTN  
 BETA .000 187.000 3.000  
 -5.000 187.000 3.000  
 DLPO-J RNL  
 REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828  
 BREF 15.1152  
 XRP 12.9510  
 YRP 6.0000  
 ZRP 6.0000  
 SCALE .0150



INCREMENTAL AXIAL FORCE COEFFICIENT DUE TO RCS JETS

MAY JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 (A) MACH = 2.50

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	REFERENCE INFORMATION
(M7D18)	M-7: UPNT 1031: ROCKWELL PER CR8: CONF : BATTI BATTI	SREF .7245 50.51 LREF 7.8828 INCHES BREF 15.1152 INCHES XREF 12.5510 INCHES YREF 0.0000 INCHES ZREF 6.0000 INCHES SCALE 0.0500
(M7D19)	M-7: UPNT 1031: ROCKWELL PER CR8: CONF : BATTI BATTI	



## **YAW JET INTERFERENCE (INCREMENTAL DATA). EFFECT OF SIDESLIP ANGLE ANGLE OF ATTACK. ALPHA. DEGREES**

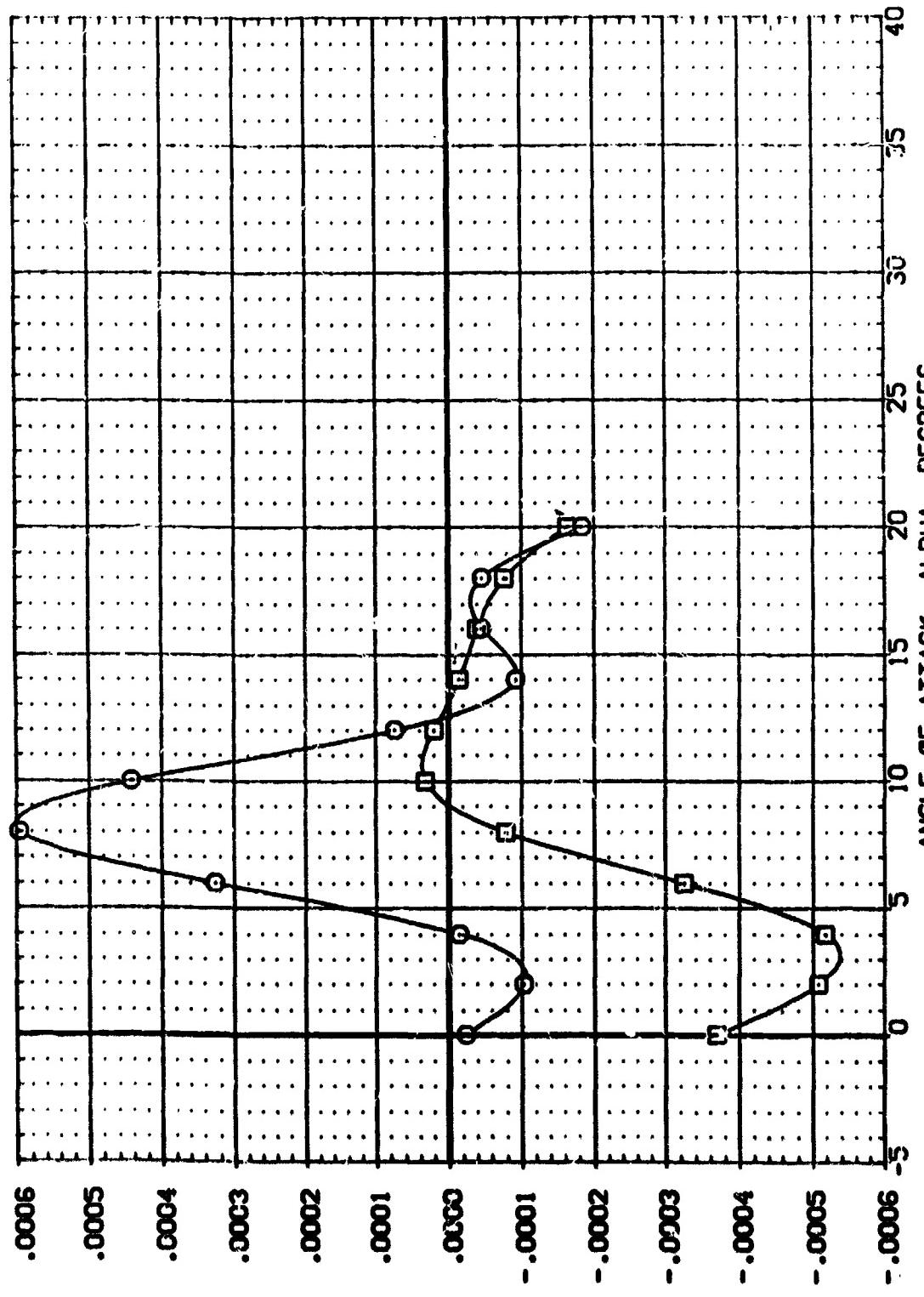
LAUNCH = 2.50

DATA SET NAME: CONFIGURATION DESCRIPTION:  
MA-7:SPN 1001 .RECKWELL PRR 088  
PA-7:SPN 1031 .RECKWELL PRR 088

ALPO-J RNL  
0.000 3.000  
-5.000 3.000

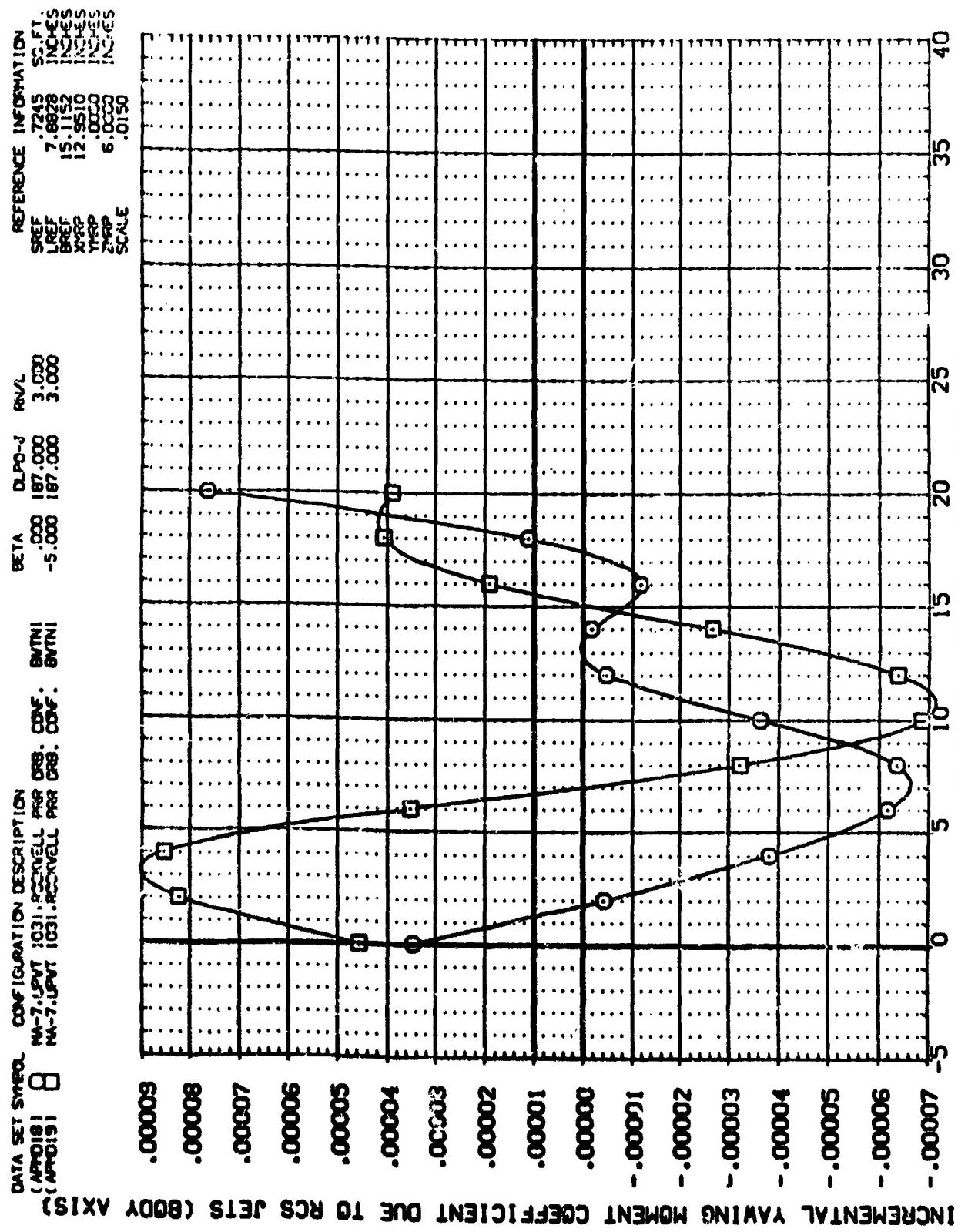
BETA CONF: BYTN1 CONF: BYTN1  
0.000 -5.000  
-5.000 187.000  
187.000 187.000

REFERENCE INFORMATION  
SREF 7.7245 30. FT.  
LREF 7.8528 INCHES  
BREF 15.52 INCHES  
XREF 12.60 INCHES  
YREF 6.000 INCHES  
ZREF 6.000 INCHES  
SCALE 1.000



INCREMENTAL SIDE FORCE COEFFICIENT DUE TO RCS JETS

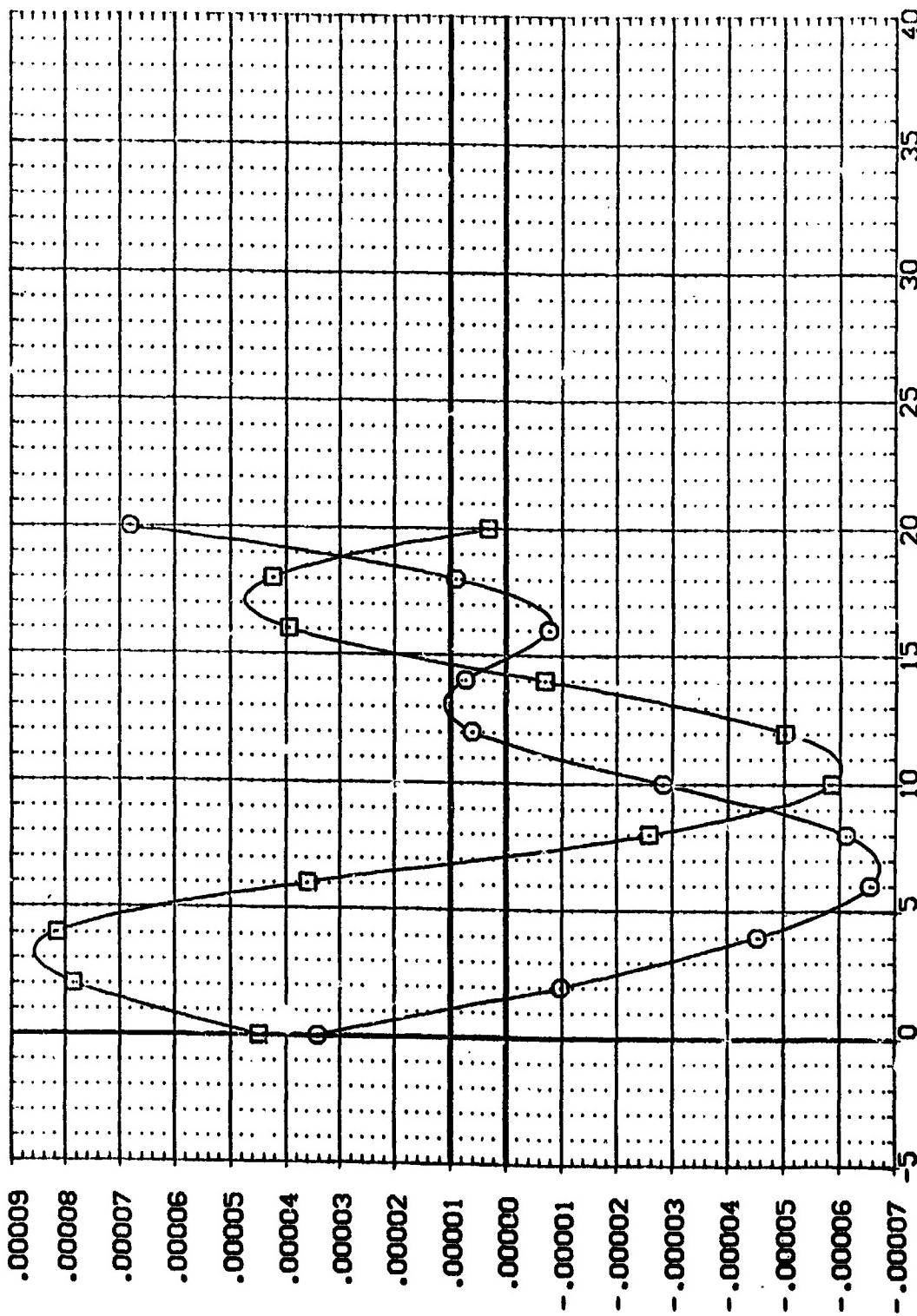
YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
( $\bar{C}_MACH = 2.50$ )



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APR018) MA-7-UPUT 1031-ROCKWELL PRR ORB. CONF.: BWTN1  
 (APR019) MA-7-PPV 1031-ROCKWELL PRR GRB. CONF.: BWTN1

REFERENCE INFORMATION  
 SREF .7245 SC.FT.  
 LREF 7.8328 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9540 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP 0.0000 INCHES  
 SCALE 0.150



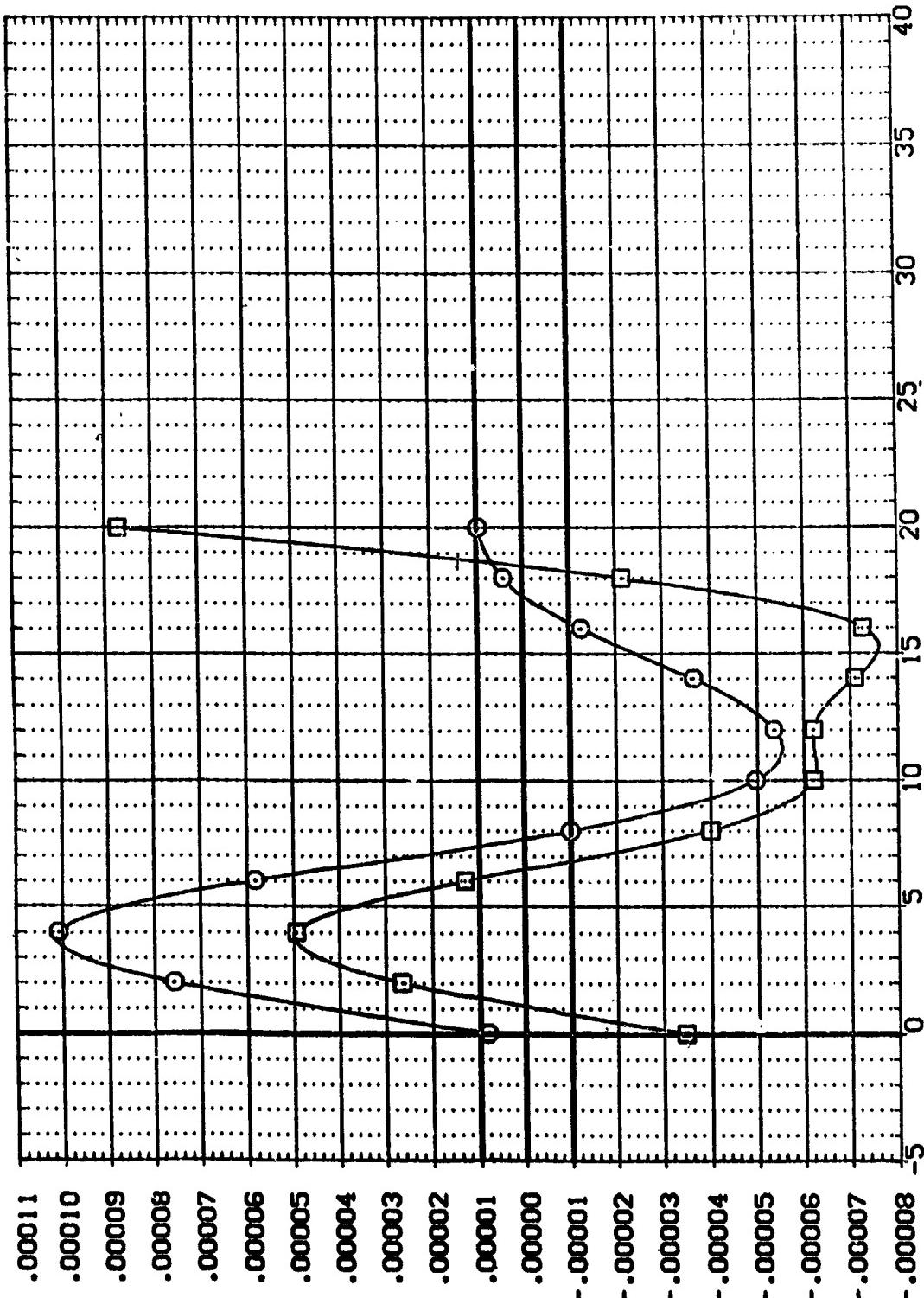
INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (STABILITY AXIS)

YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 (A) MACH = 2.50

INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS (BODY AXIS)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APM018) MA-7, UPNT 1031, ROCKWELL PRG ORB. CONF: BNTRN  
 (APM019) MA-7, UPNT 1031, ROCKWELL PRG ORB. CONF: BNTRN

REFERENCE INFORMATION  
 SREF 7245 SQ.FT.  
 LREF 7.8828 INCHES  
 SREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF 6.0000 INCHES  
 ZREF .0150 SCALE



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE

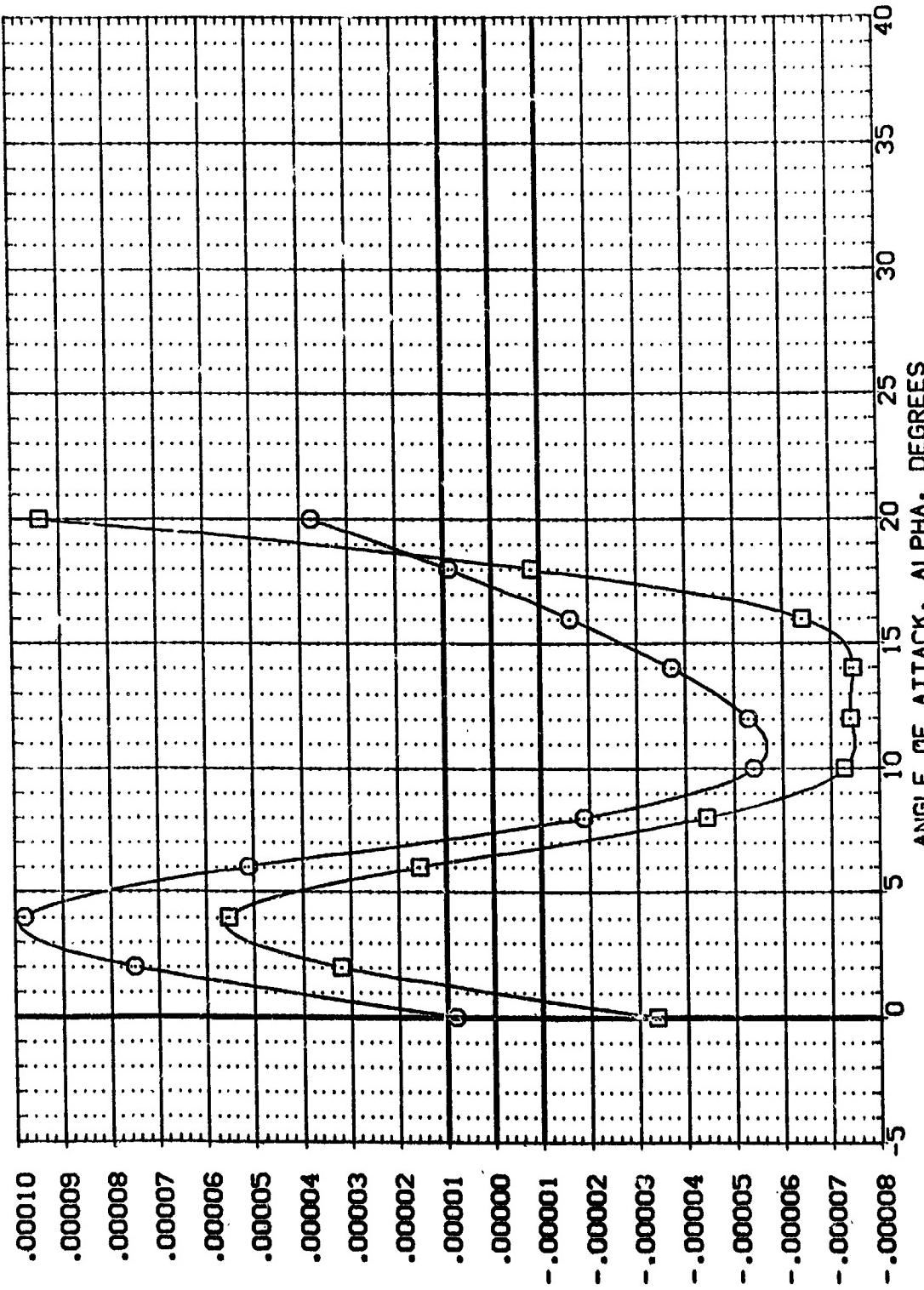
(A) MACH = 2.50

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(APM18) 8 MA-7, UPNT 1031, ROCKWELL PR. CRB. CONF.: BWTN1  
(APM19) 9 MA-7, UPNT 1031, ROCKWELL PR. CRB. CONF.: BWTN1

REFERENCE INFORMATION  
SREF .7245 SQ.FT.  
LREF 7.8828 INCHES  
BZCF 15.1152 INCHES  
XHCP 12.9510 INCHES  
YHCP 6.0000 INCHES  
ZHCP .0150 SCALE

INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS STABILITY AXIS



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
( $V_{MACH} = 2.50$ )

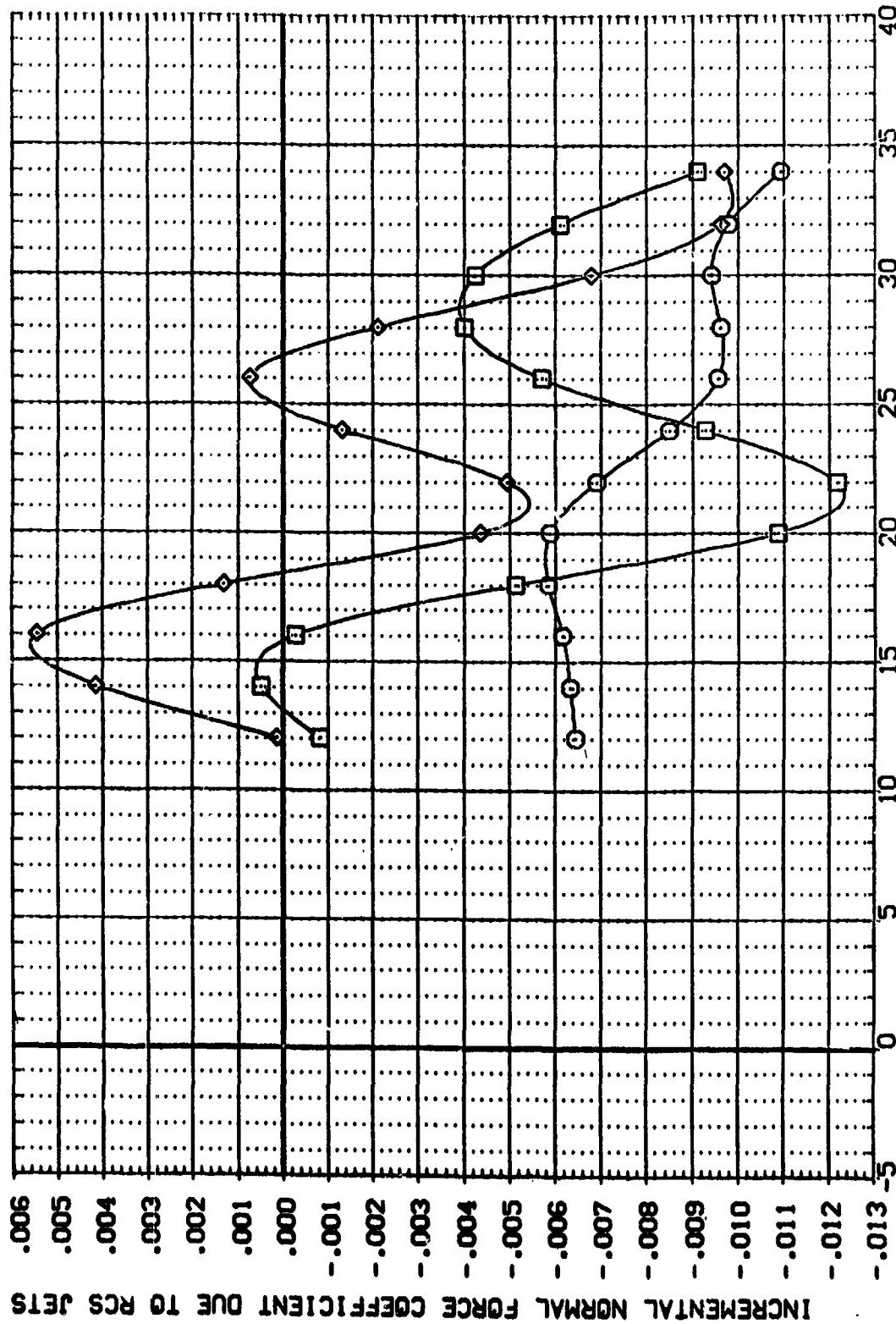
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## DATA SET SYMBOL

MA-7, UPN 1031, ROCKWELL PRR ORB. CONF. BVTNI  
 APT032 MA-7, UPN 1031, ROCKWELL PRR ORB. CONF. BVTNI  
 APT032 MA-7, UPN 1031, ROCKWELL PRR ORB. CONF. BVTNI  
 APT033 MA-7, UPN 1031, ROCKWELL PRR ORB. CONF. BVTNI

CONFIGURATION DESCRIPTION		BETA	$\Delta \alpha_{P0-J}$	RNL
APT031	MA-7, UPN 1031, ROCKWELL PRR ORB. CONF.	.000	.310.000	1.000
APT032	MA-7, UPN 1031, ROCKWELL PRR ORB. CONF.	-2.500	.310.000	1.000
APT033	MA-7, UPN 1031, ROCKWELL PRR ORB. CONF.	-5.000	.310.000	1.000

REFERENCE INFORMATION		
SREF	.7245	SC.FT.
LREF	.8828	INCHES
BREF	15.1152	INCHES
XRP	12.9540	INCHES
YRP	.0000	INCHES
ZRP	6.0000	INCHES
SCALE	.0150	



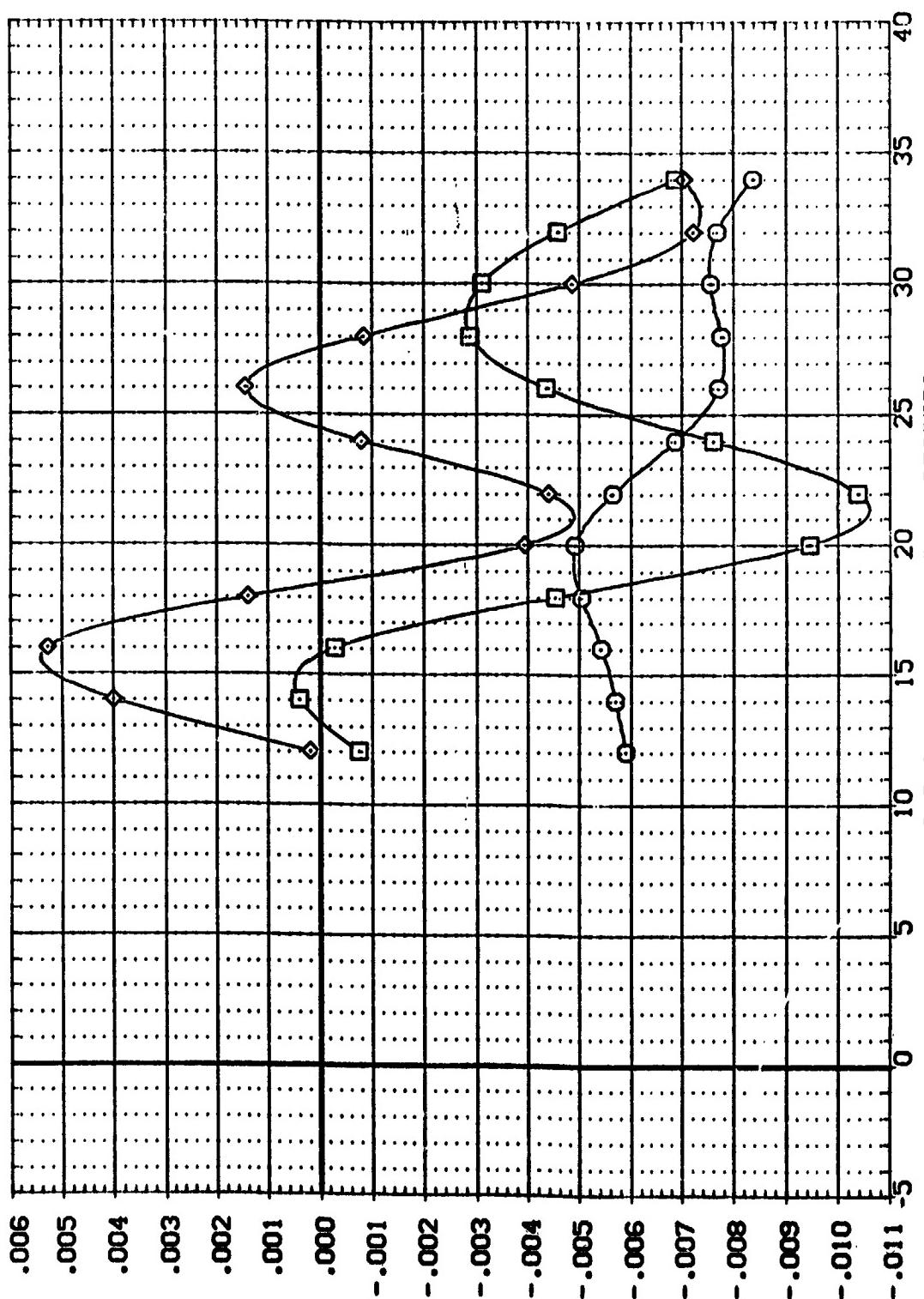
YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 $C_{YJ} MACH = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

[APP030] C MA-7, UPVT 1031, ROCKWELL PRR CRB. CONF: BYTN1  
 [APP032] □ MA-7, UPVT 1031, ROCKWELL PRR CRB. CONF: BYTN1  
 [APP033] ◇ MA-7, UPVT 1031, ROCKWELL PRR CRB. CONF: BYTN1

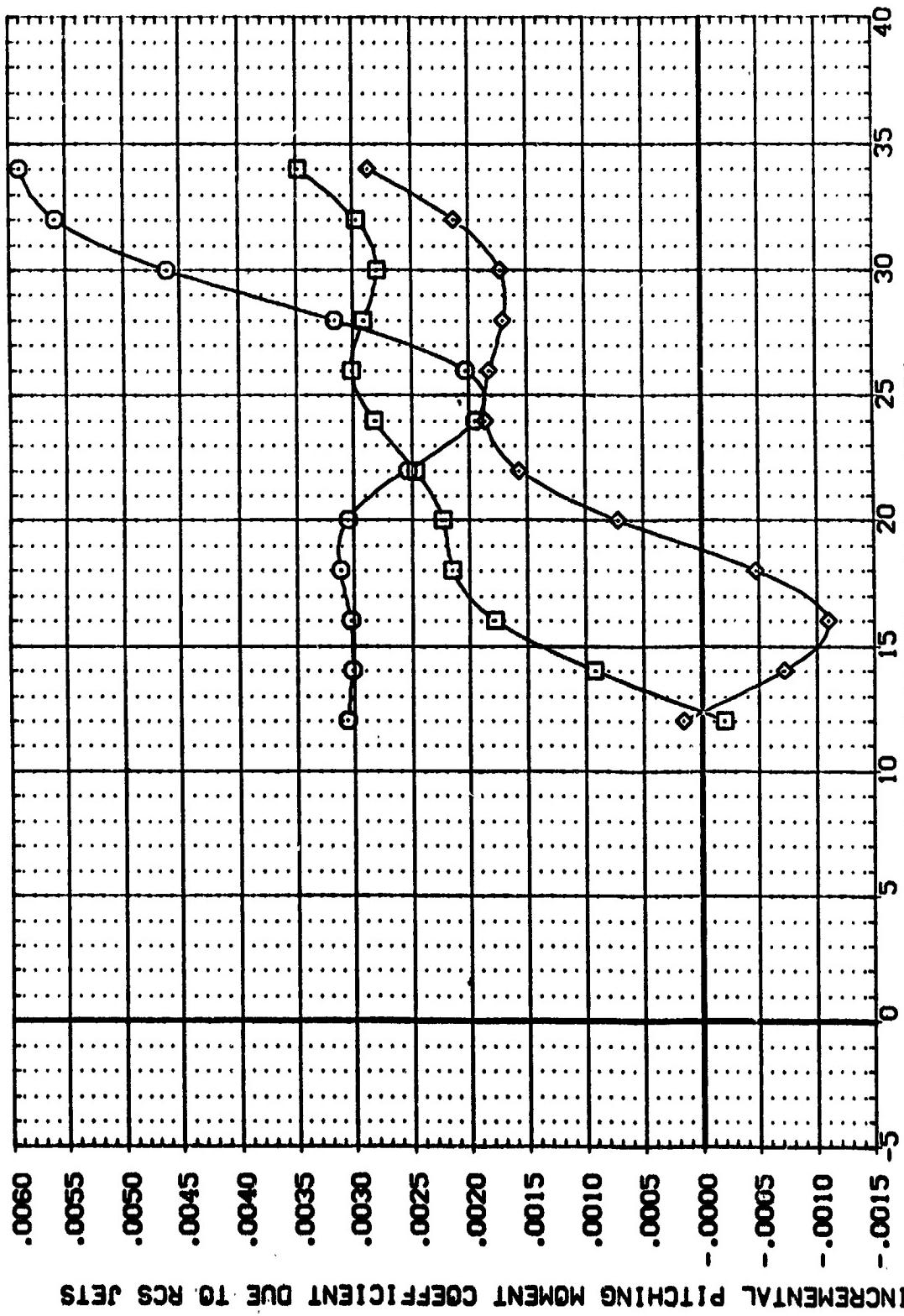
REFERENCE INFORMATION:  
 SREF 7245 SO FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9310 INCHES  
 YREF 6.0000 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150

INCREMENTAL LIFT FORCE COEFFICIENT DUE TO RCS JETS



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 (MACH = 4.00)

DATA SET NAME: CONFIGURATION DESCRIPTION: BVTN1  
 (APR030) MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF: BVTN1  
 (APR032) MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF: BVTN1  
 (APR033) MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF: BVTN1  
 REFERENCE INFORMATION:  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XRP 12.9510 INCHES  
 YRP .0000 INCHES  
 ZRP 6.0000 INCHES  
 SCALE .0150



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 $(\alpha)_{MACH} = -4.00$

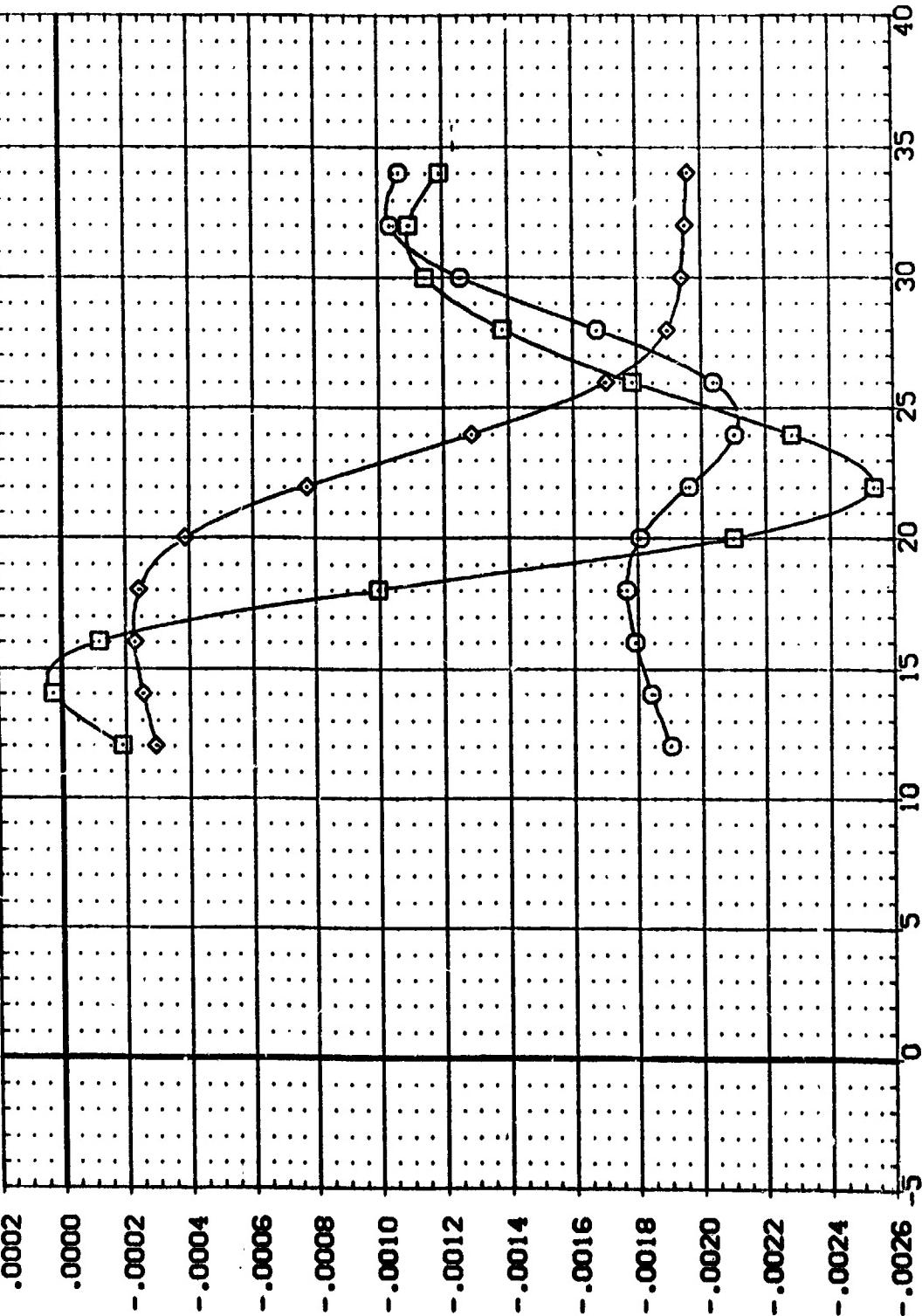
DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APP030)	□	MA-7. UPVT	1031. ROCKWELL	PRR	ORG.	CONF:	BMTN1	.000	310.000	1.000
(APP032)	△	MA-7. UPVT	1031. ROCKWELL	PRR	ORG.	CONF:	BMTN1	-2.500	310.000	1.000
(APP033)	▽	MA-7. UPVT	1031. ROCKWELL	PRR	ORG.	CONF:	BMTN1	-5.000	310.000	1.000

REFERENCE INFORMATION

SREF	.725	SO. FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XRP	12.9510	INCHES
YRP	.0000	INCHES
ZRP	6.0000	INCHES
SCALE	.0150	

INCREMENTAL AXIAL FORCE COEFFICIENT DUE TO RCS JETS



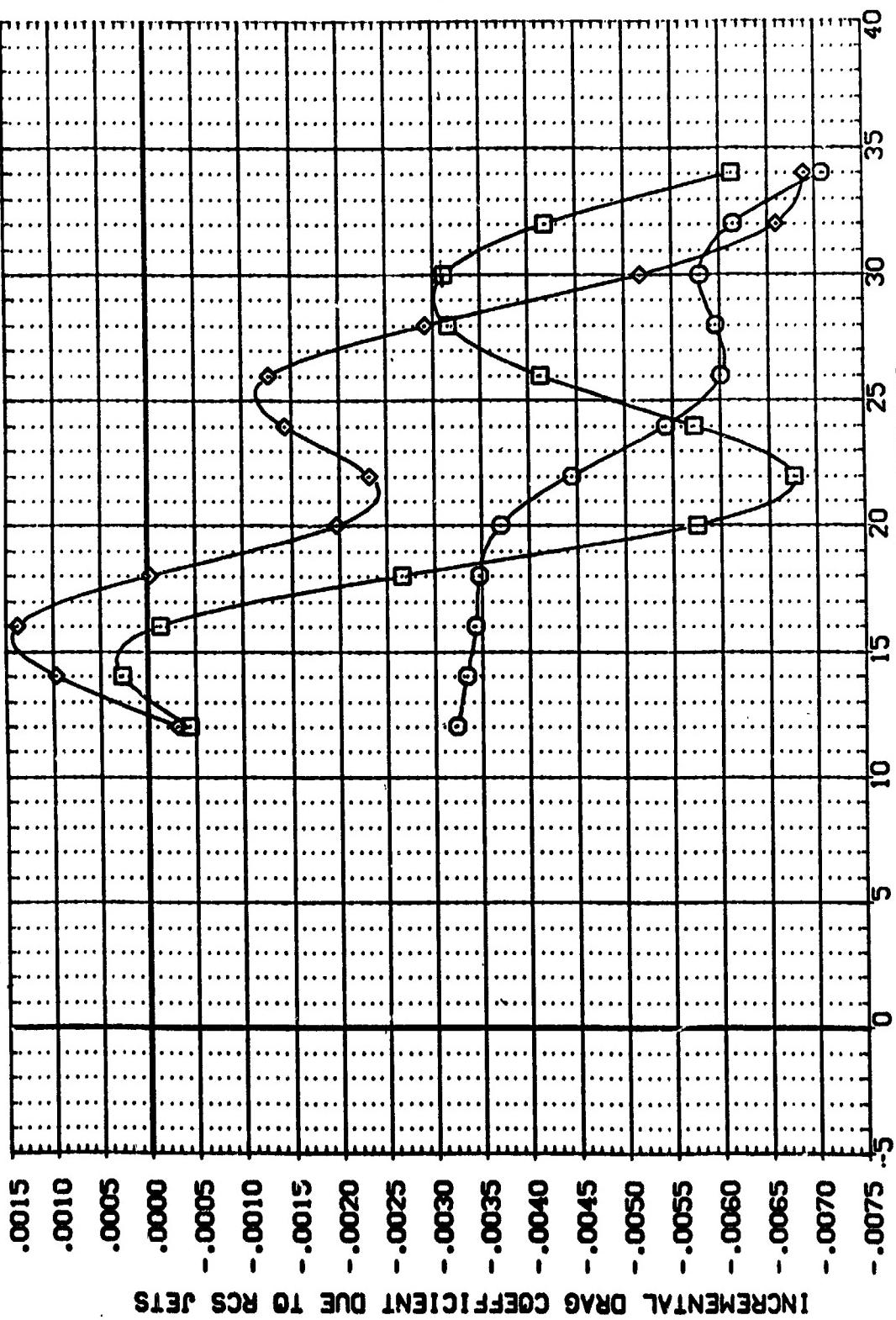
YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE

V<sub>A</sub>MACH = 4.00

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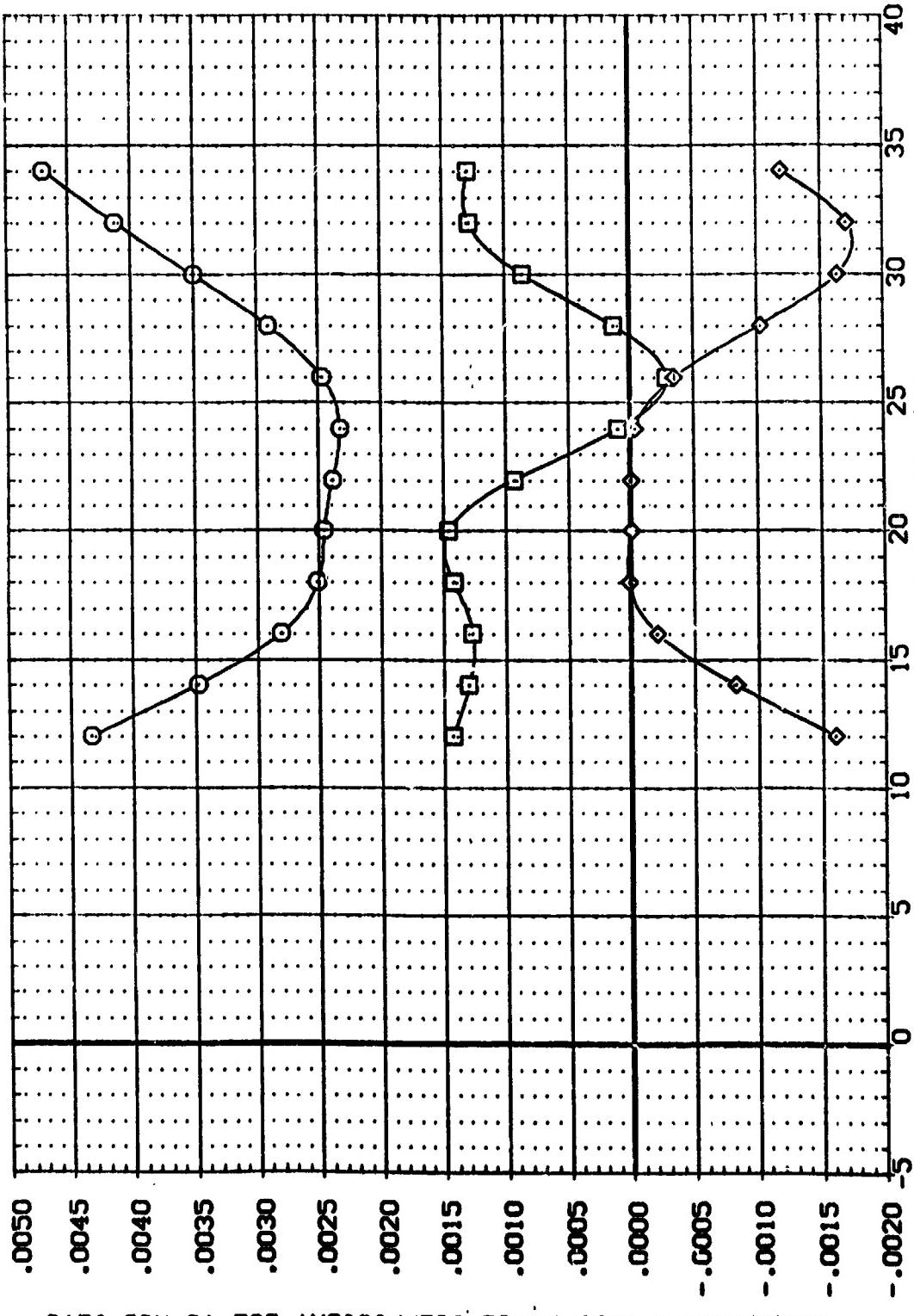
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APD00) MA-7: UPN 1031, ROCKWELL PRR GRS. CONF.: BMTN  
 (APD02) MA-7: UPN 1031, ROCKWELL PRR GRS. CONF.: BMTN  
 (APD33) MA-7: UPN 1031, ROCKWELL PRR GRS. CONF.: BMTN

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP .0000 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0150 INCHES  
 SCALE

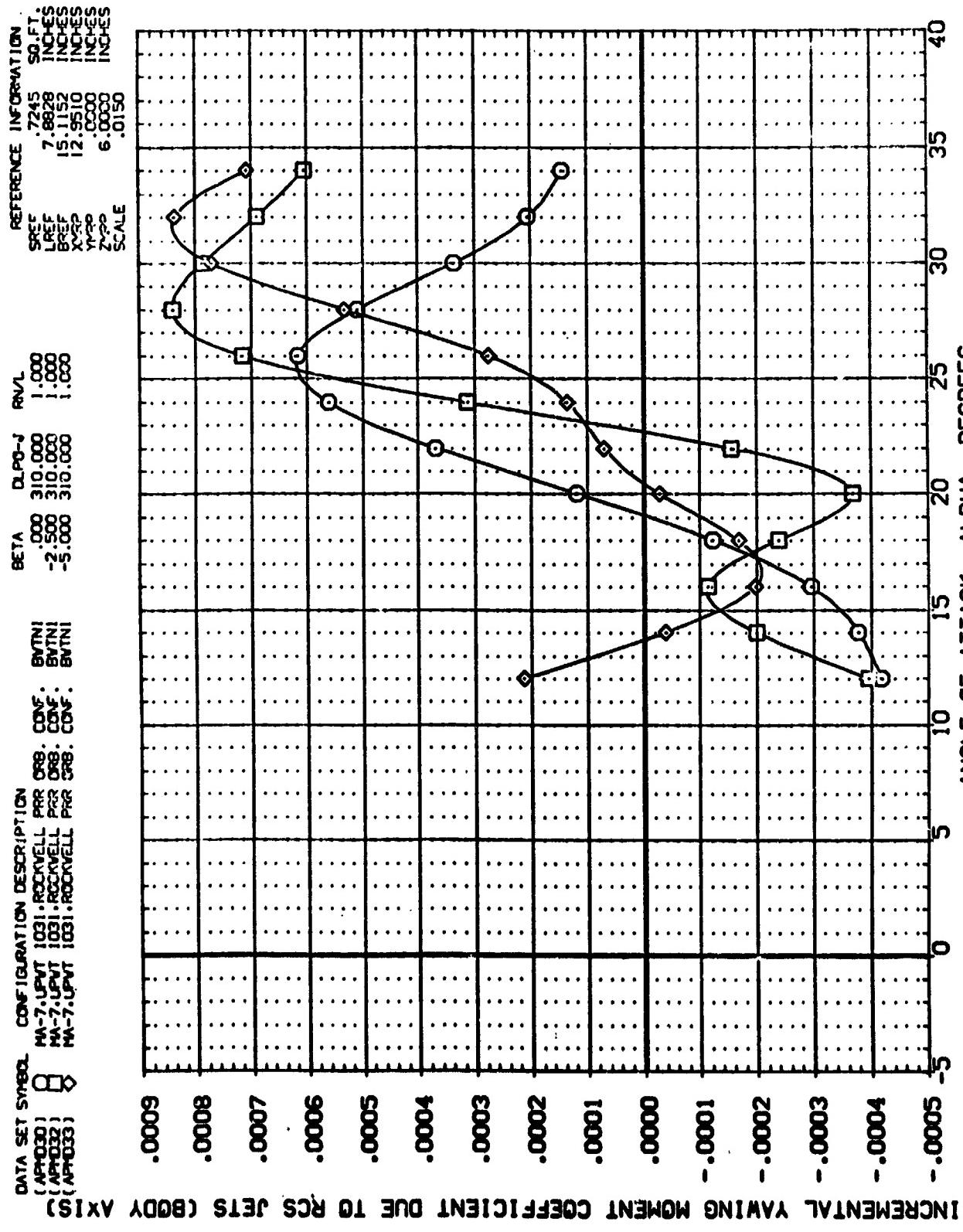


DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 APP0301 MA-7, UPNT 1031, ROCKWELL PRR CONF : BWTN1  
 APP0321 MA-7, UPNT 1031, ROCKWELL PRR CONF : BWN1  
 APP0331 MA-7, UPNT 1031, ROCKWELL PRR CONF : BWTN1

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.9828 INCHES  
 BREF 15.1152 INCHES  
 XRP 12.9510 INCHES  
 YRP .0000 INCHES  
 ZRP 6.0000 INCHES  
 SCALE .0150



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 $(\text{MACH}) = 4.00$



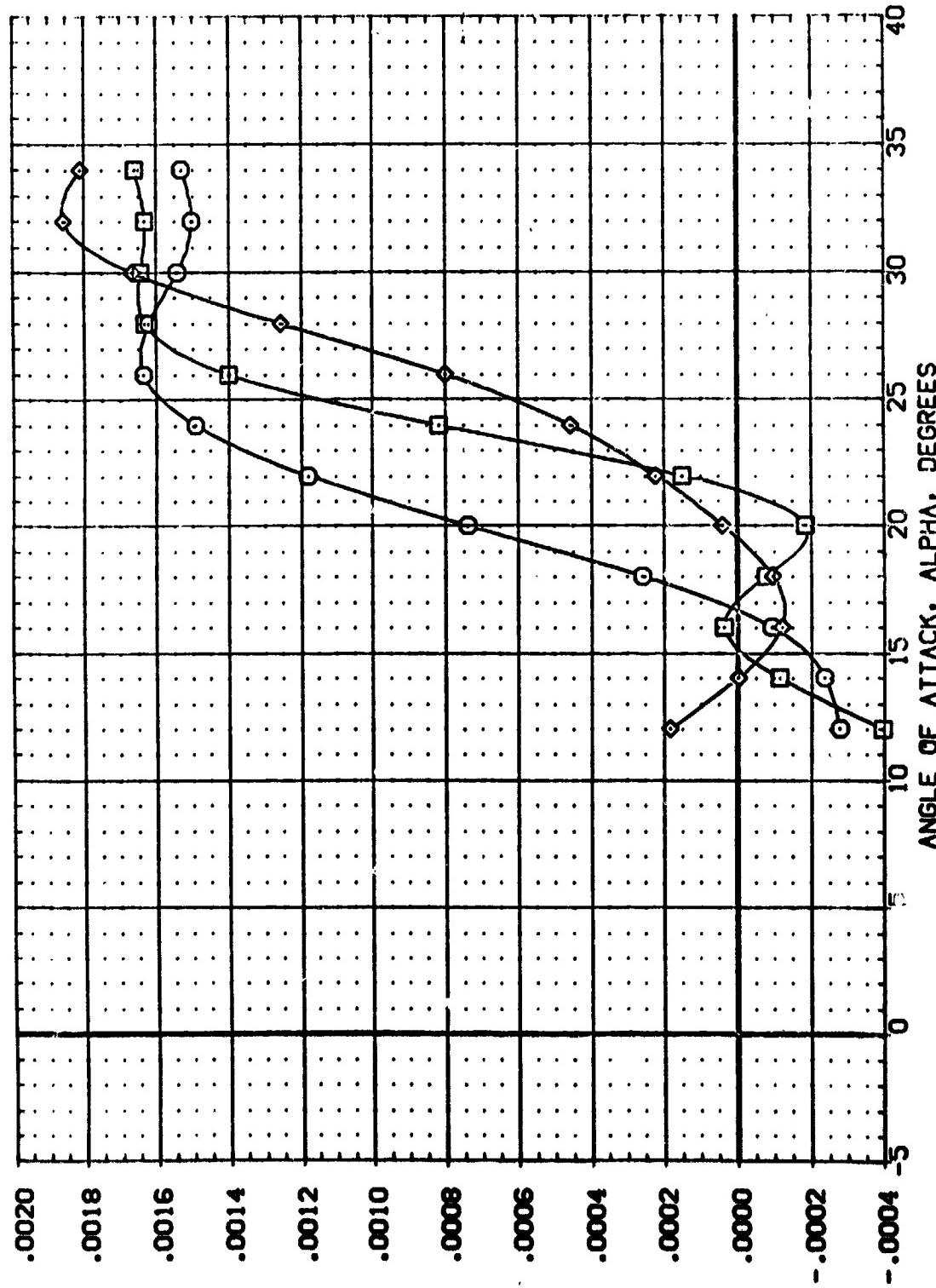
YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 $(\alpha)_MACH = 4.00$

REFERENCE INFORMATION

SREF	.7245	SC. FT.
LREF	7.8928	INCHES
BREF	15.1152	INCHES
XMRP	12.9510	INCHES
YMRP	.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

DATA SET SYMBOL CONFIGURATION DESCRIPTION

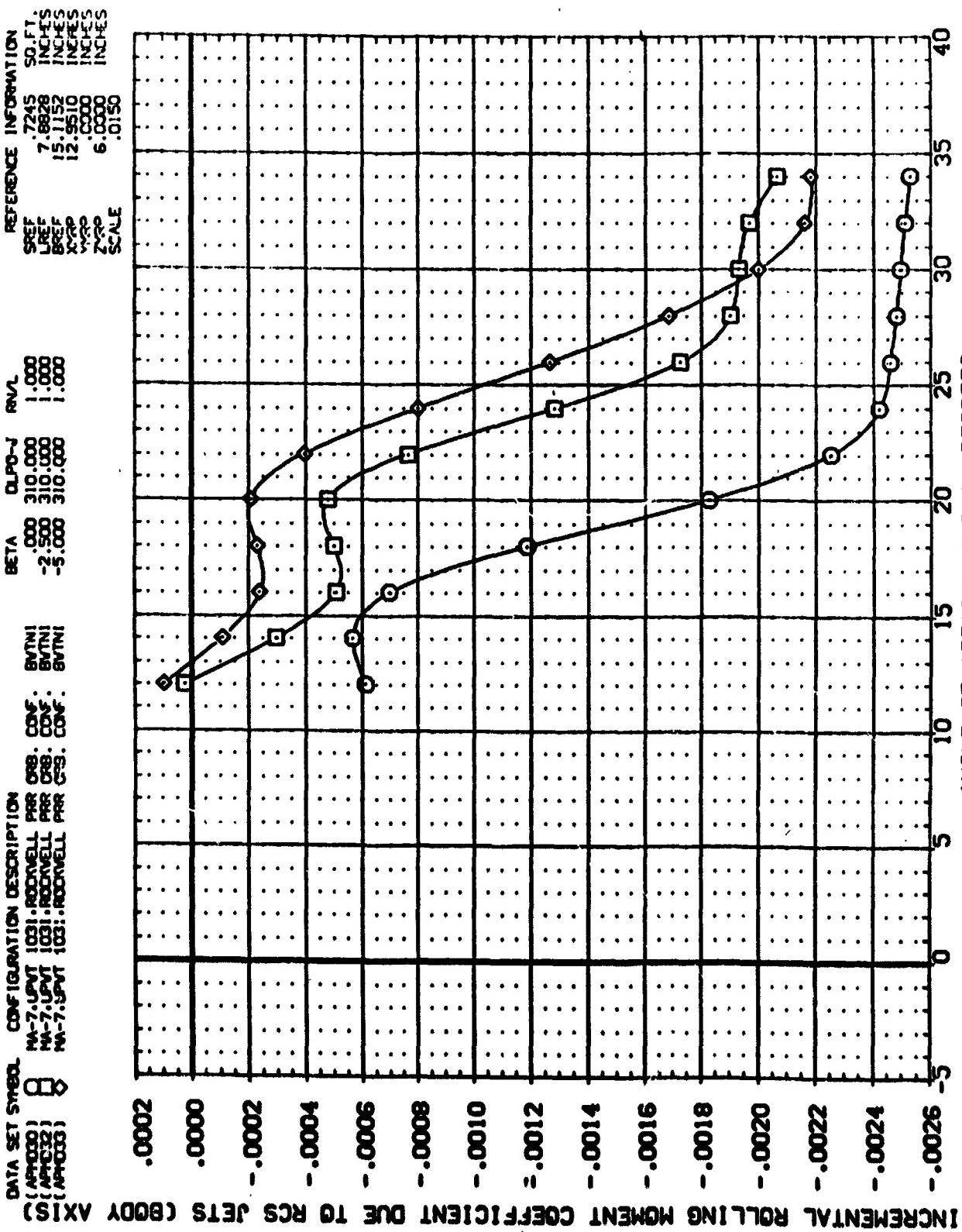
(APR030)	□	MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF.
(APR032)	○	MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF.
(APR033)	△	MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF.



INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (STABILITY AXIS)

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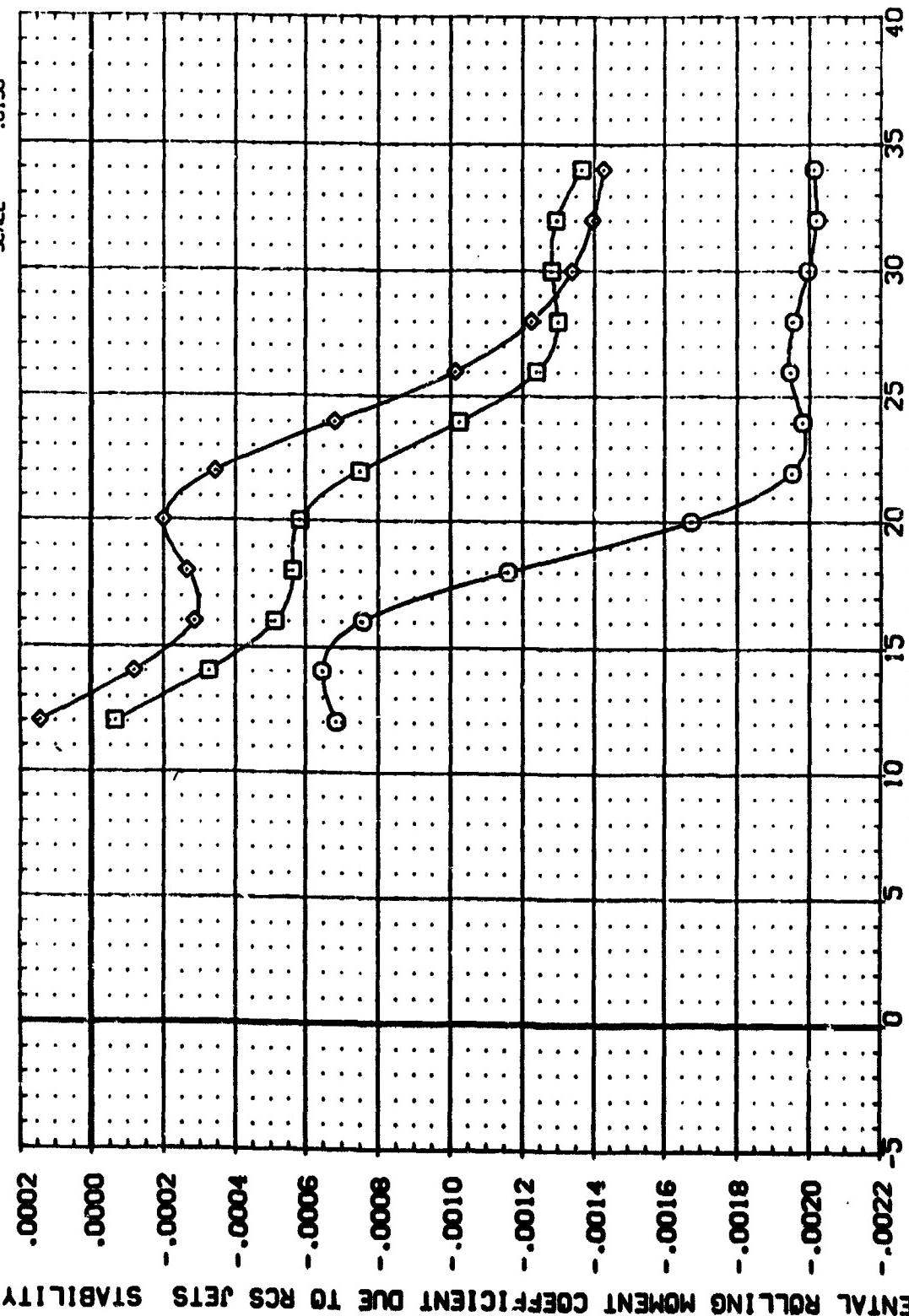
YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
( $\alpha$ )<sub>MACH</sub> = 4.00



YAW JET INTERFERENCE (INCREMENTAL DATA). EFFECT OF SIDESLIP ANGLE  
 $(V_{MACH} = 4.00)$

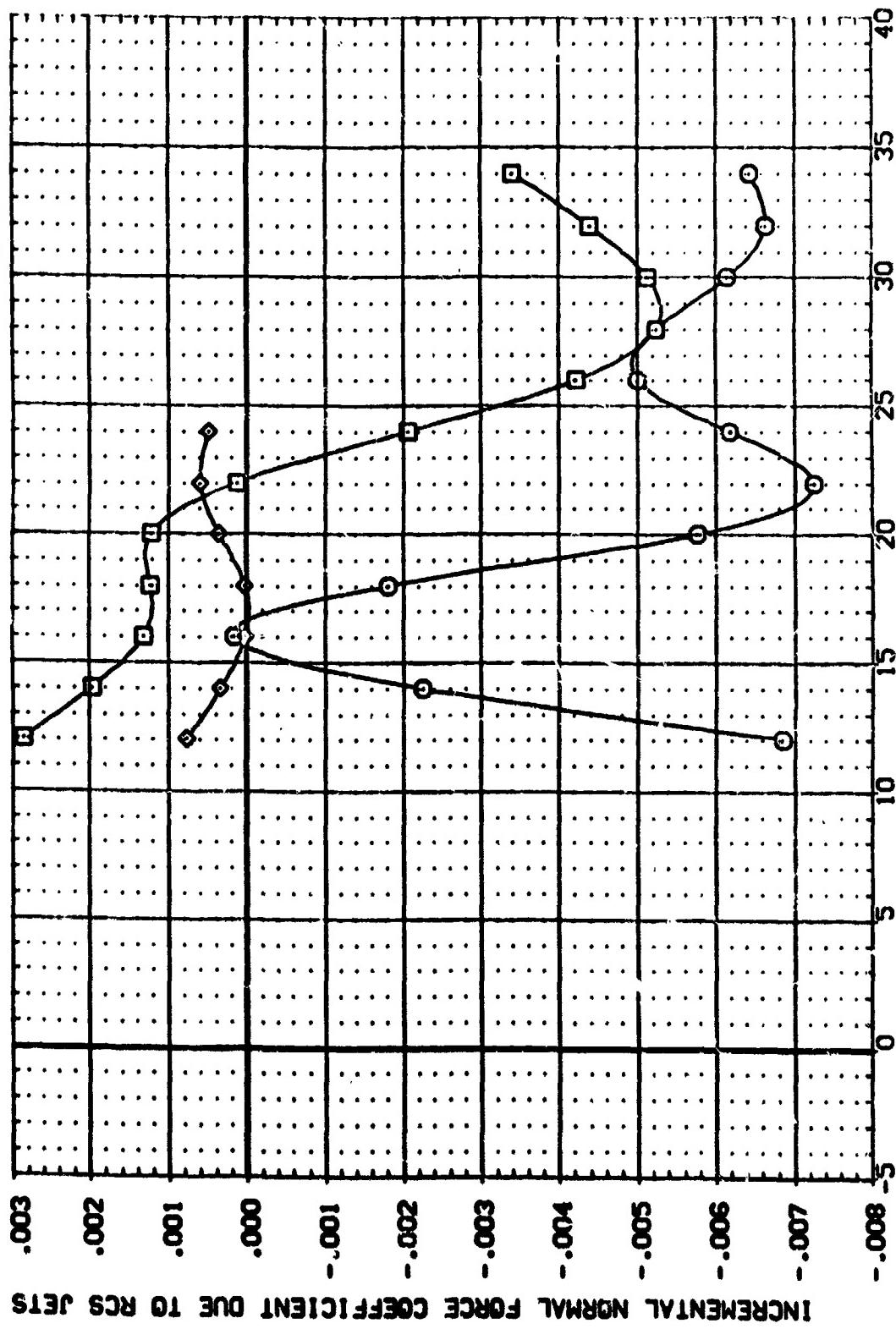
DATA SET STREAM CONFIGURATION DESCRIPTION  
 (APP00) MA-7, UPN 1031, ROCKWELL PRO CRB. CONF.  
 (APP02) MA-7, UPN 1031, ROCKWELL PRO CRB. CONF.  
 (APP03) MA-7, UPN 1031, ROCKWELL PRO CRB. CONF.

REFERENCE INFORMATION  
 SREF .7245 SO. FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF .0000 INCHES  
 ZREF 6.0000 INCHES  
 .0150 SCALE



INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS STABILITY AXIS  
 YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 (MACH = 4.00)

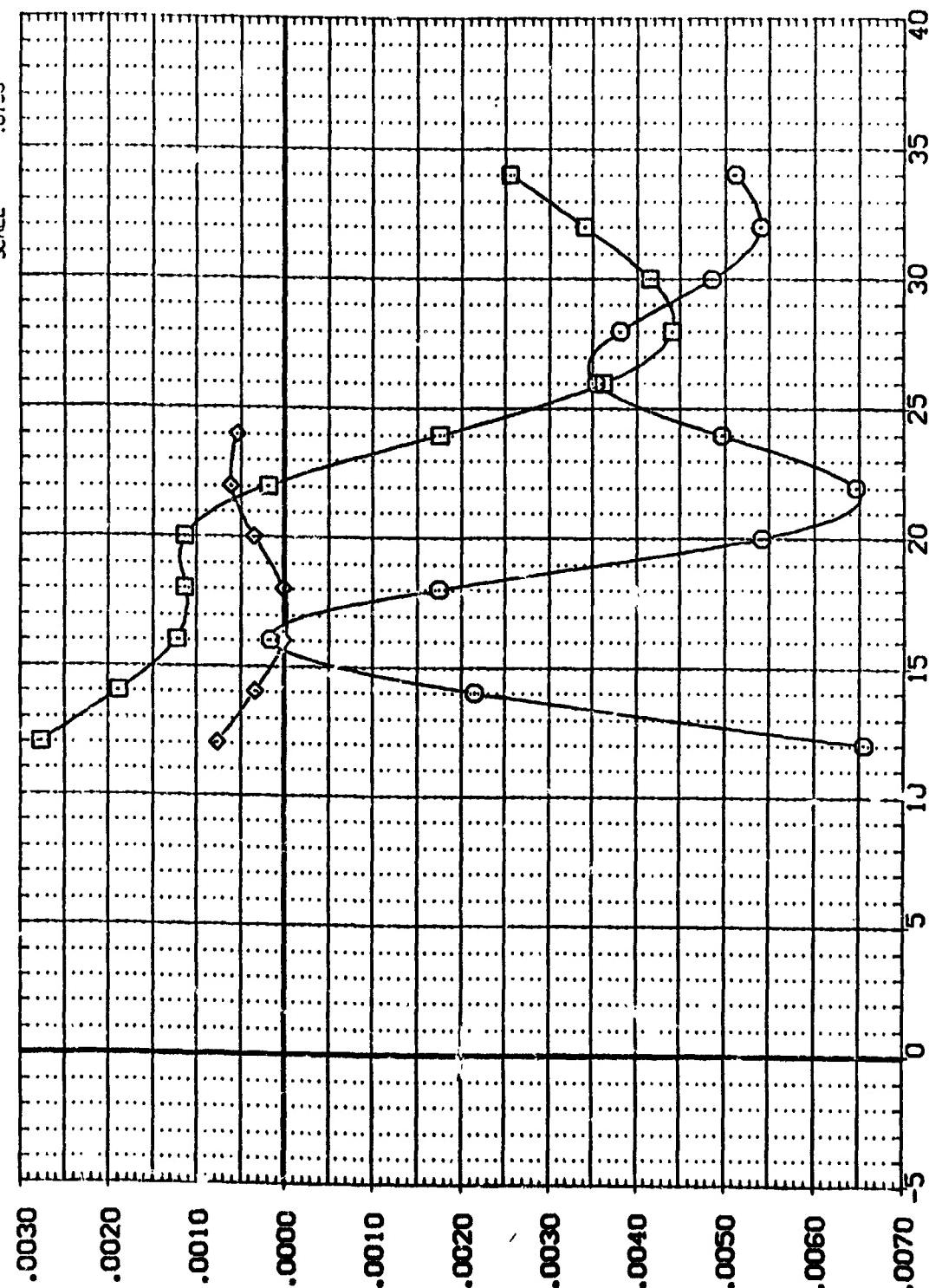
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (AP026) MA-7, UPW 1031, ROCKWELL F9F CONF. BYTINI  
 (AP027) MA-7, UPW 1031, ROCKWELL F9F CONF. BYTINI  
 (AP028) MA-7, UPW 1031, ROCKWELL F9F CONF. BYTINI  
 REFERENCE INFORMATION  
 SREF .7245 SC.F.T.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XHPP 12.9510 INCHES  
 YHPP .0000 INCHES  
 ZHPP 6.0000 INCHES  
 SCALE .0150



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF REYNOLDS NUMBER  
 (A)MACH = 4.00  
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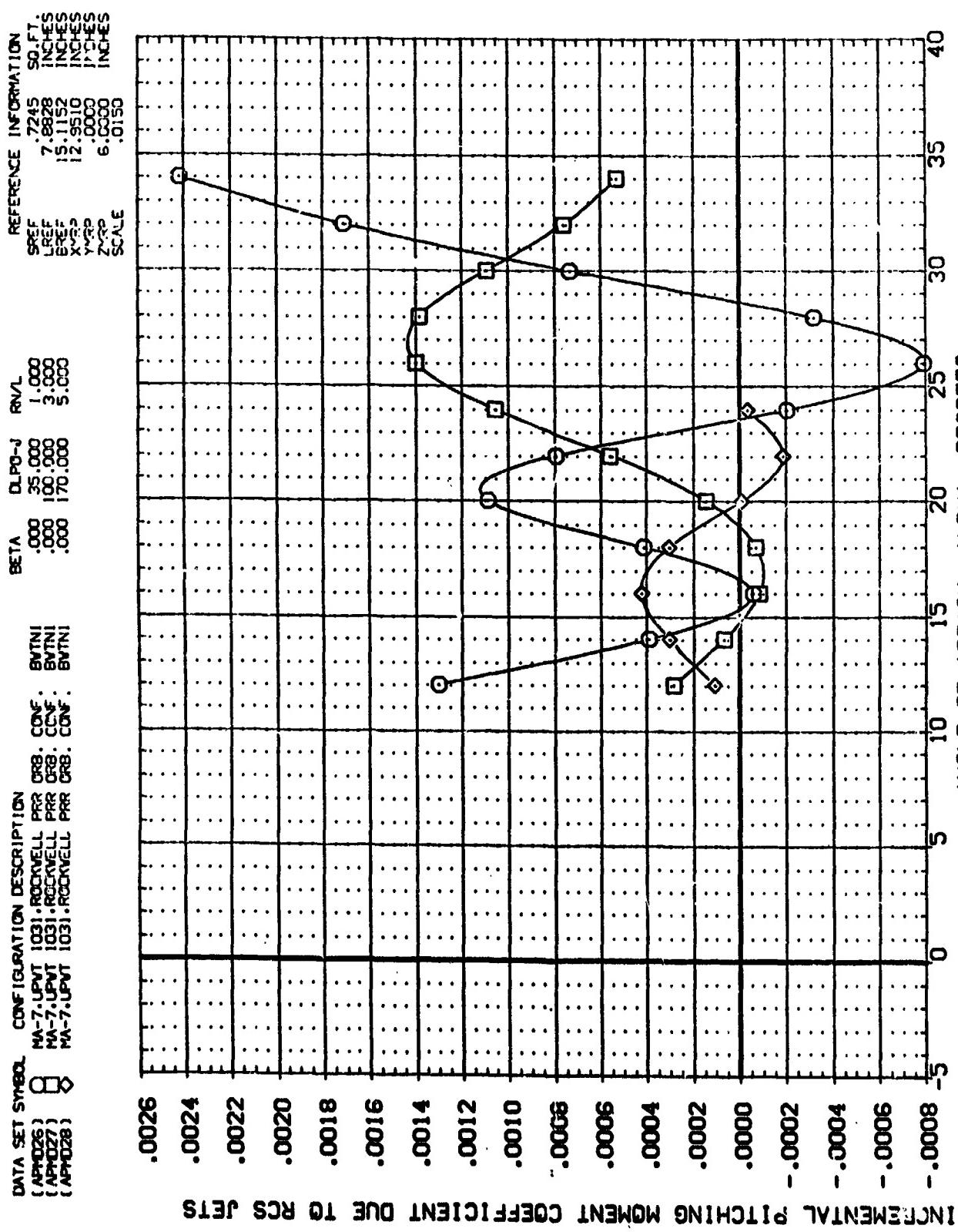
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 [APR026] MA-7, UP, 1031, ROCKWELL, PRR, CONF: BVTN1  
 [APR027] MA-7, UPVT, 1031, ROCKWELL, PRR, CONF: BVTN1  
 [APR328] MA-7, UPVT, 1031, ROCKWELL, PRR, CONF: BVTN1

REFERENCE INFORMATION  
 SREF 7.7245 SO FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF 6.2200 INCHES  
 ZREF .0150 INCHES



INCREMENTAL LIFT FORCE COEFFICIENT DUE TO RCS JETS

YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF REYNOLDS NUMBER  
 $(\text{V}_\infty \text{Mach}) = 4.00$

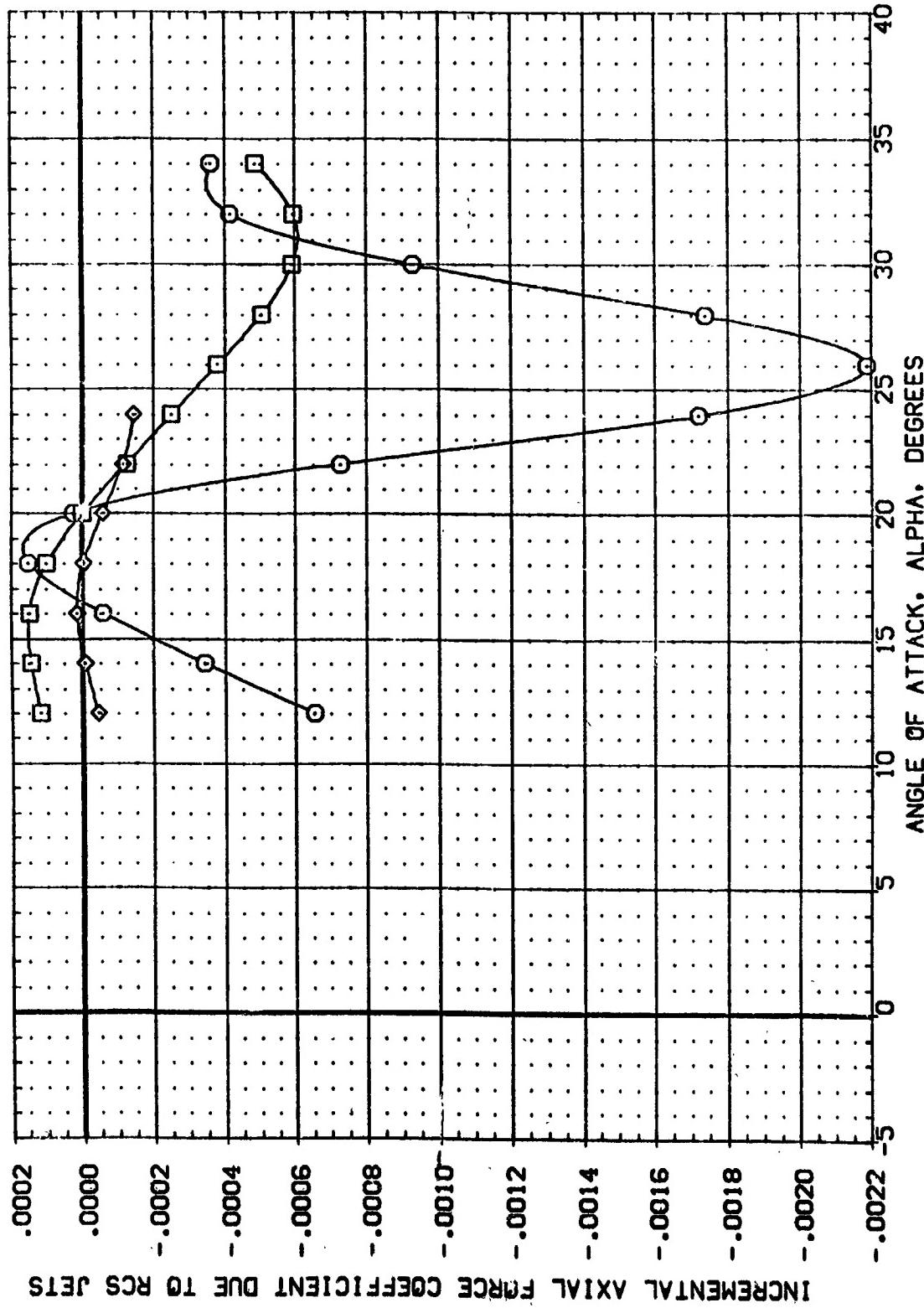


YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF REYNOLDS NUMBER  
( $\alpha_{JET}$ ) = 4.00

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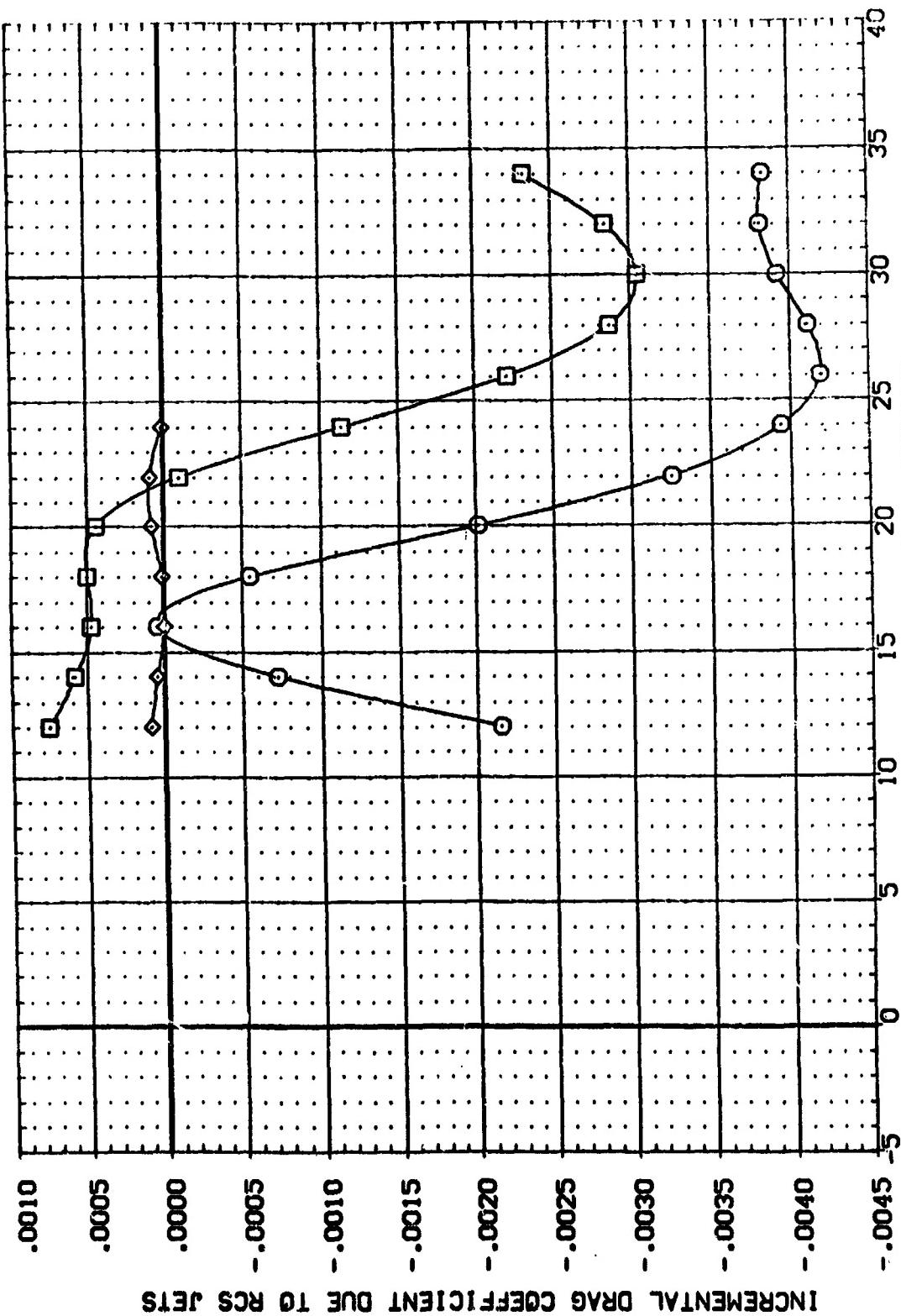
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APR026) MA-7. UPNT 1031. ROCKWELL PRR CONF.  
 (APR027) MA-7. UPNT 1031. ROCKWELL PRR CONF.  
 (APR028) MA-7. UPNT 1031. ROCKWELL PRR CONF.

REFERENCE INFORMATION	
SREF	.7245 SQ.FT.
LREF	7.6828 INCHES
BREF	15.1152 INCHES
XMRP	12.9510 INCHES
YMRP	6.0000 INCHES
ZMRP	.0150 INCHES
SCALE	



YAW-JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF REYNOLDS NUMBER  
 $(V/MACH = 4.00)$

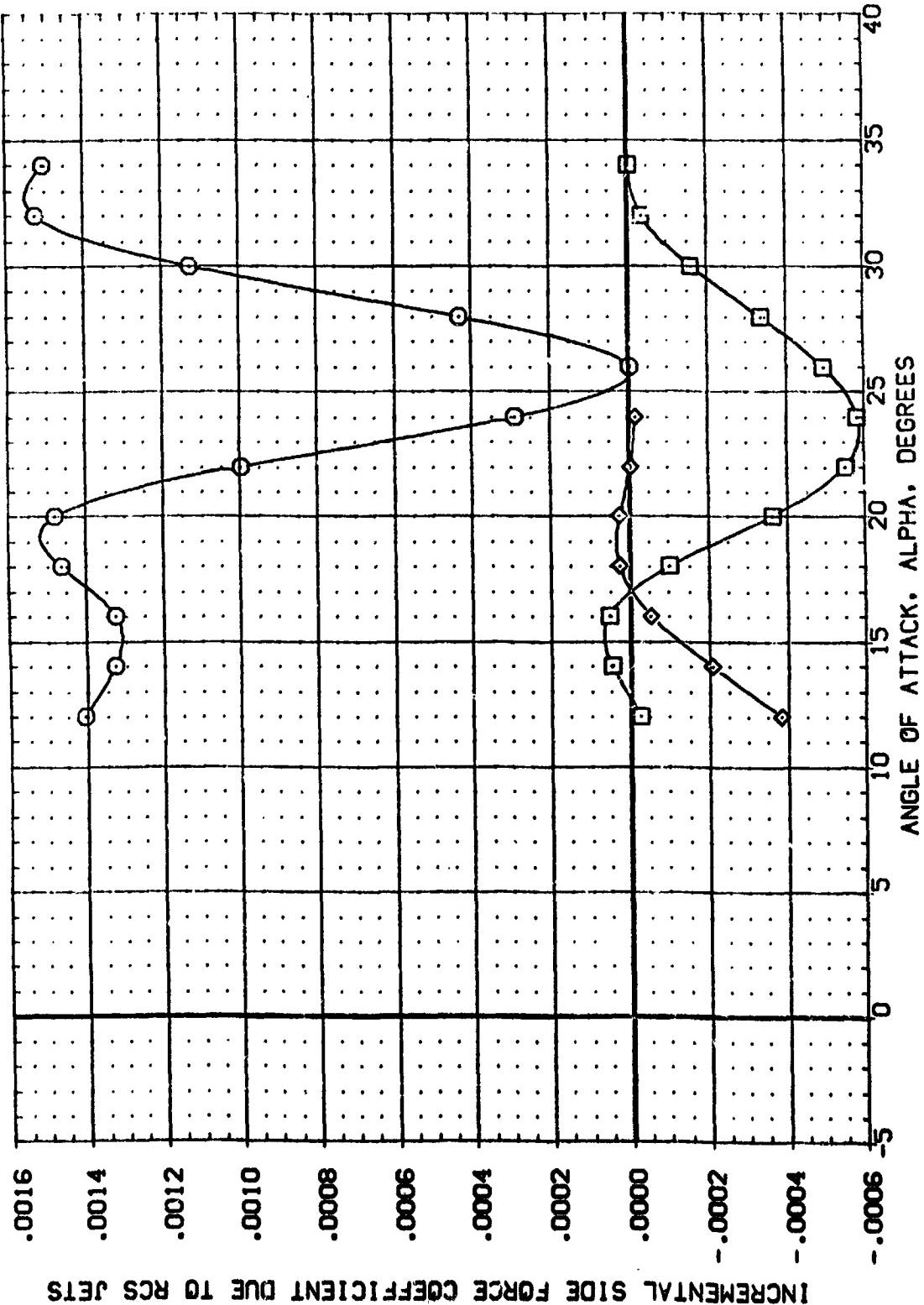
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APM026) MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.: BNTNI  
 (APM027) MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.: BNTNI  
 (APM028) MA-7, SGT 1031, ROCKWELL PRR ORB. CONF.: BNTNI  
 REFERENCE INFORMATION  
 SREF .7245 SC. FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XRP 12.9510 INCHES  
 YRP .0000 INCHES  
 ZRP 6.0000 INCHES  
 SCALE .0150



YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF REYNOLDS NUMBER  
 (A) MACH = 4.00

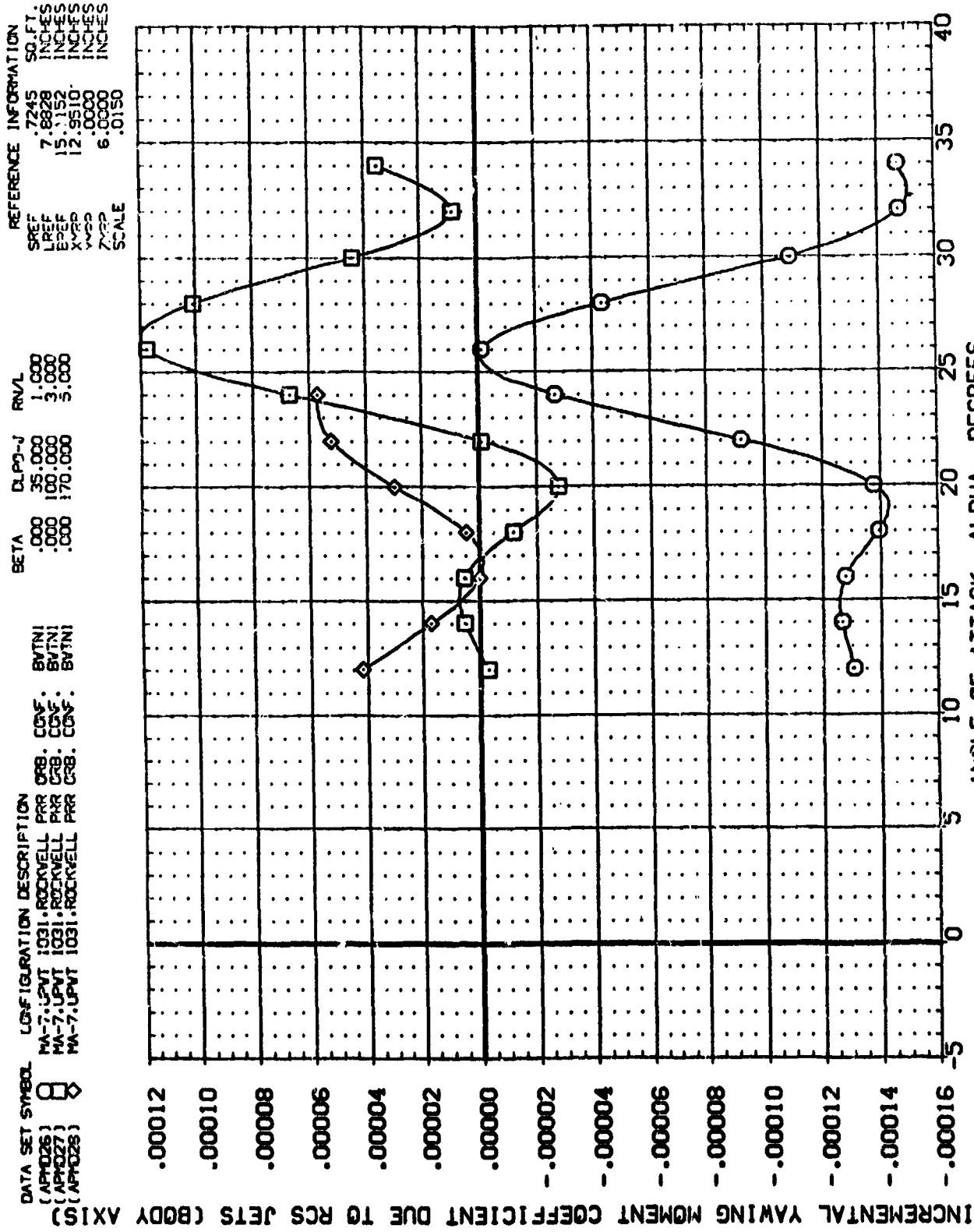
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APM026) MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.  
 (APM027) MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.  
 (APM028) MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF.

REFERENCE INFORMATION  
 SREF .7245 SC.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP .0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150



INCREMENTAL SIDE FORCE COEFFICIENT DUE TO RCS JETS  
 (VW)MACH = 4.00

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YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF REYNOLDS NUMBER

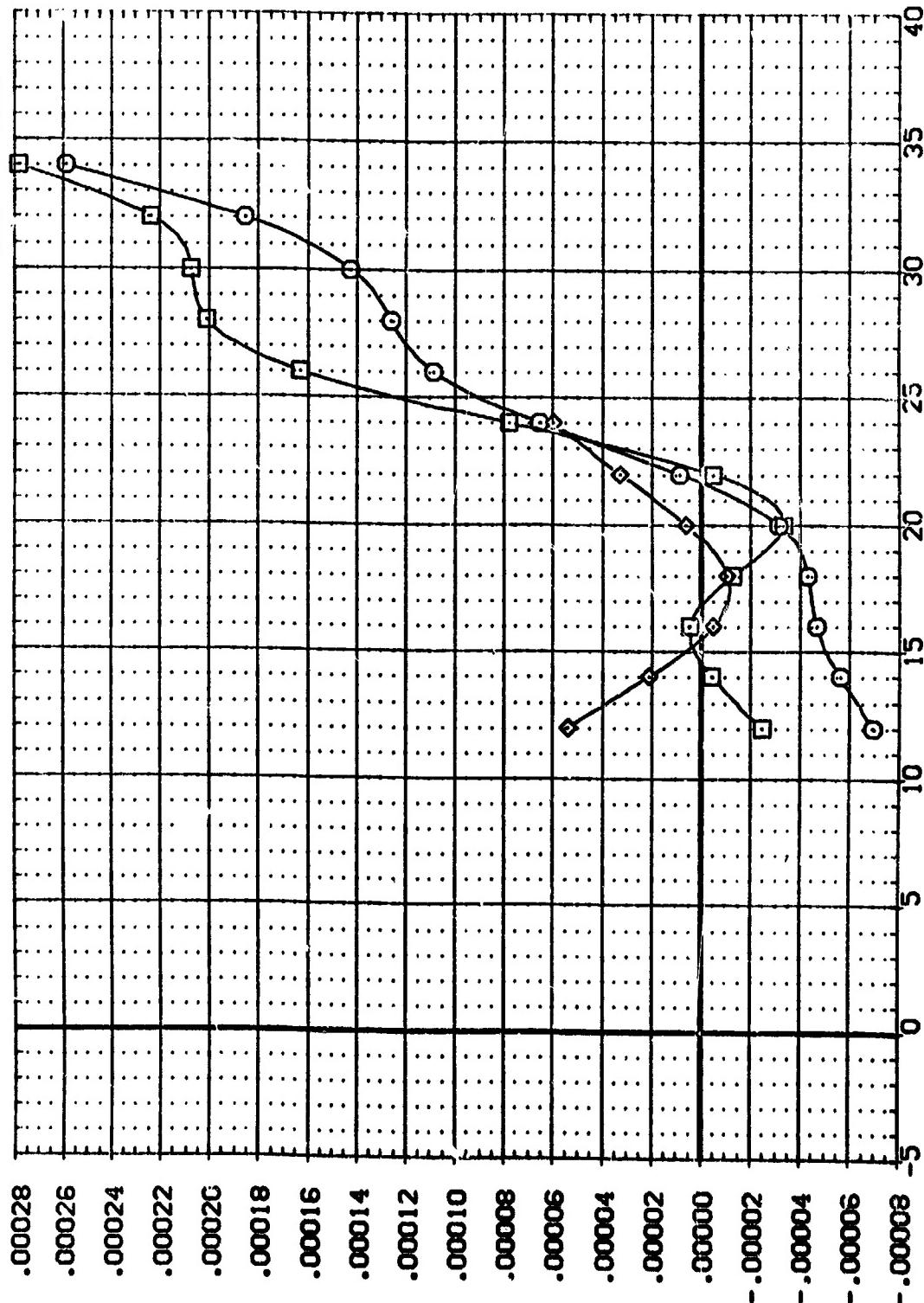
C<sub>A</sub>MACH = 4.00

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DATA SET SYMBOL

(APD26) MA-7-UPN 1031-ROCKWELL PRR ORB. CONF.  
(APD27) MA-7-UPN 1031-ROCKWELL PRR GRB. CONF.  
(APD28) MA-7-UPN 1031-ROCKWELL PRR GRB. CONF.

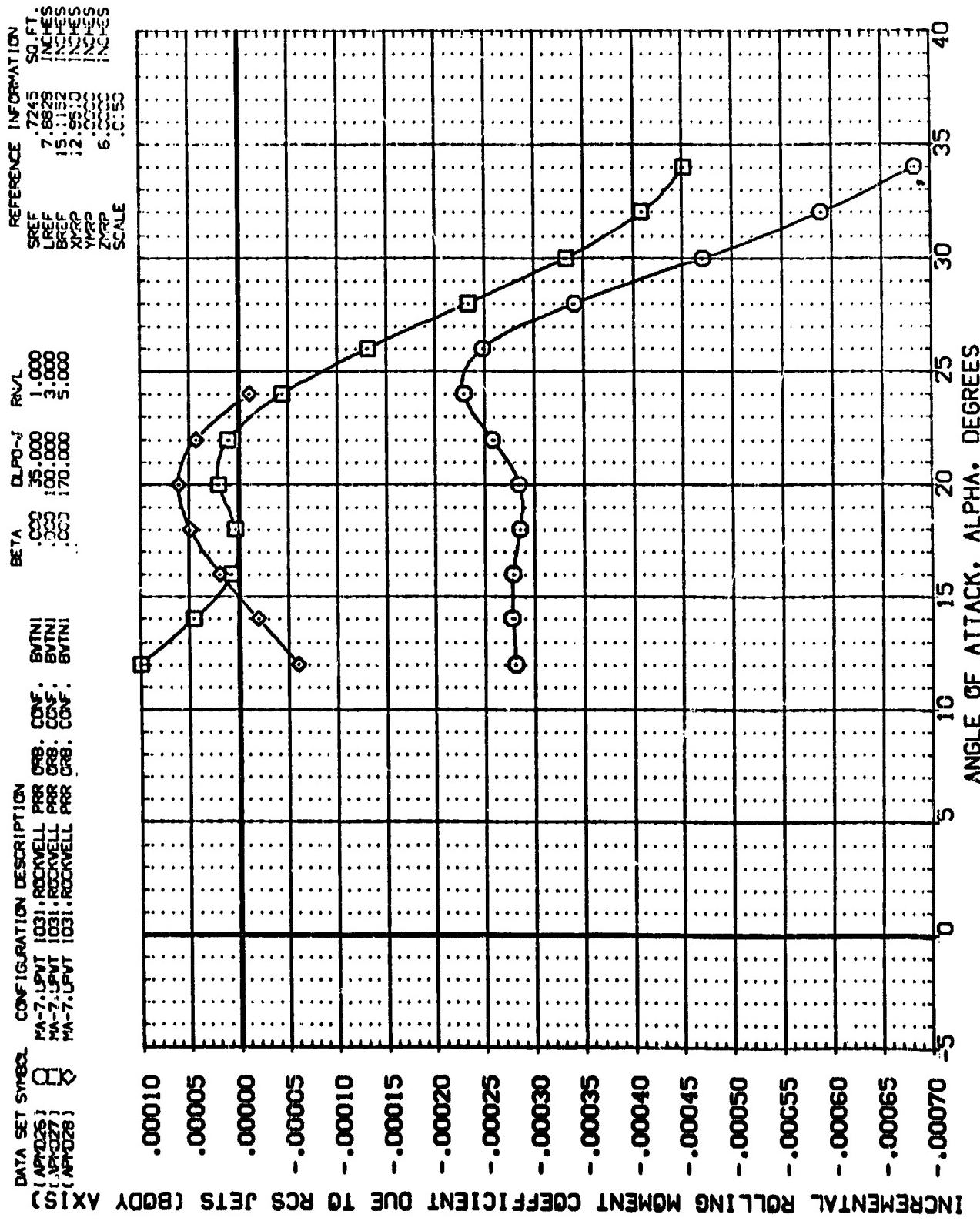
CONFIGURATION DESCRIPTION  
INTERFERENCE INFORMATION  
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LREF 7.8928 INCHES  
BREF 15.1152 FEET  
XMRP 12.5510  
YMRP 6.0000  
ZMRP 6.0000  
SCALE .0150



INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (STABILITY AXIS)

XIV JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF REYNOLDS NUMBER  
( $\Delta$ MACH = 4.00)

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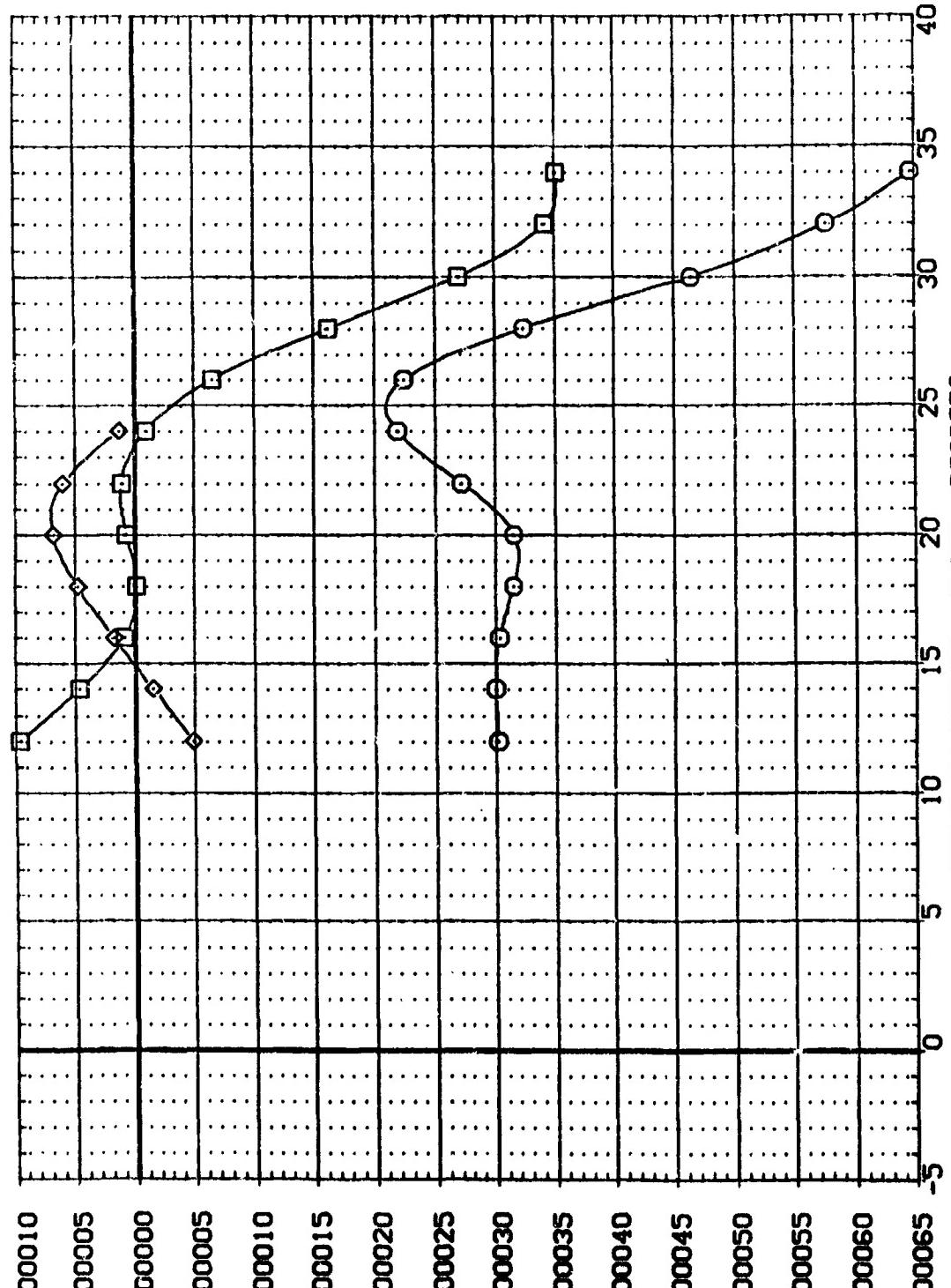


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C<sub>A</sub>MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APD026) MA-7. UPVT 1031 .RCCHELL PRR CR8. CONF: BYTNI  
 (APD027) MA-7. UPVT 1031 .RCCHELL PRR CR8. CONF: BYTNI  
 (APD028) MA-7. UPVT 1031 .RCCHELL PRR CR8. CONF: BYTNI

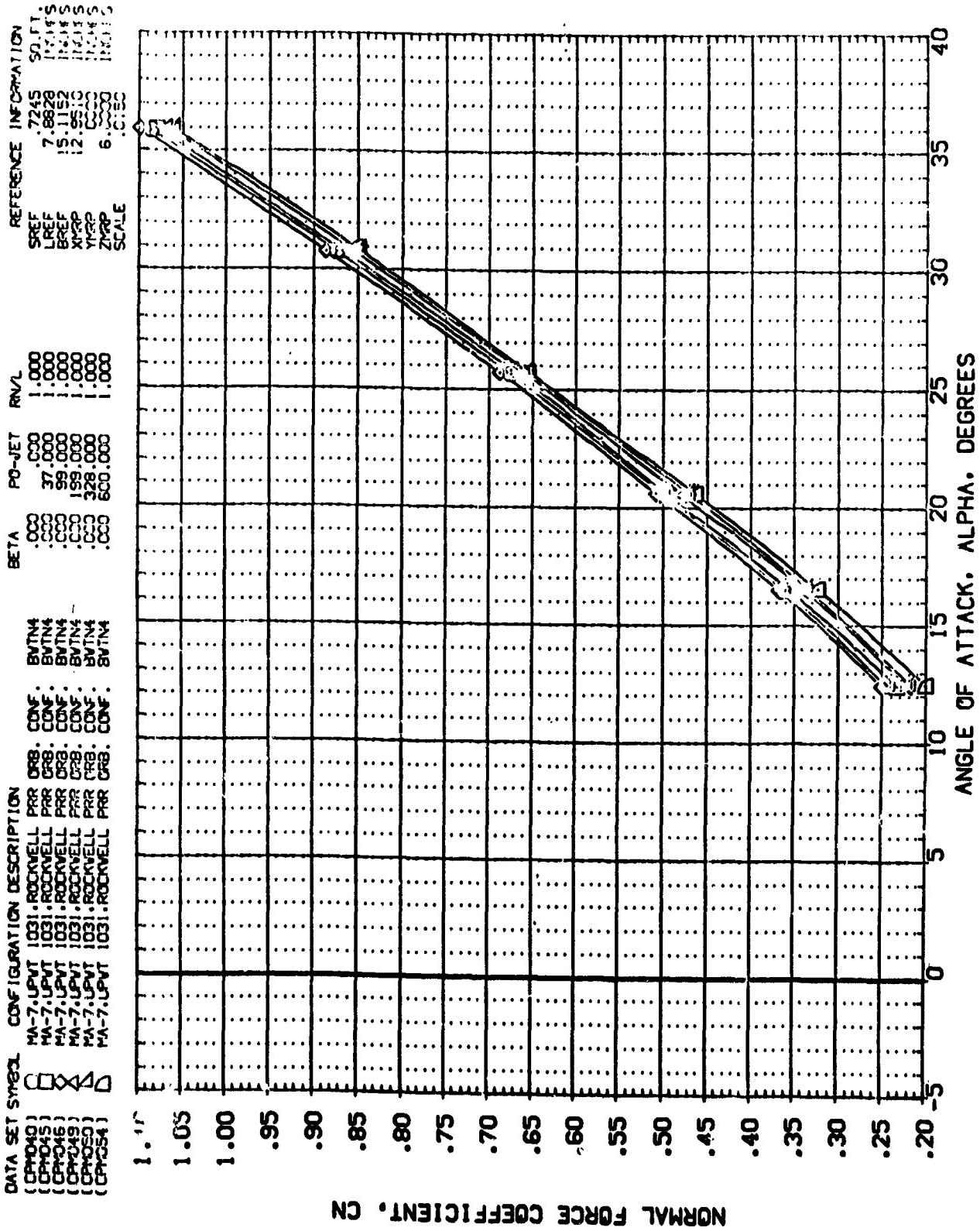
REFERENCE INFORMATION  
 SREF .7245 50.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XHREF 12.9510 INCHES  
 YHREF 6.0000 INCHES  
 ZHREF 6.0000 INCHES  
 SCALE .0150



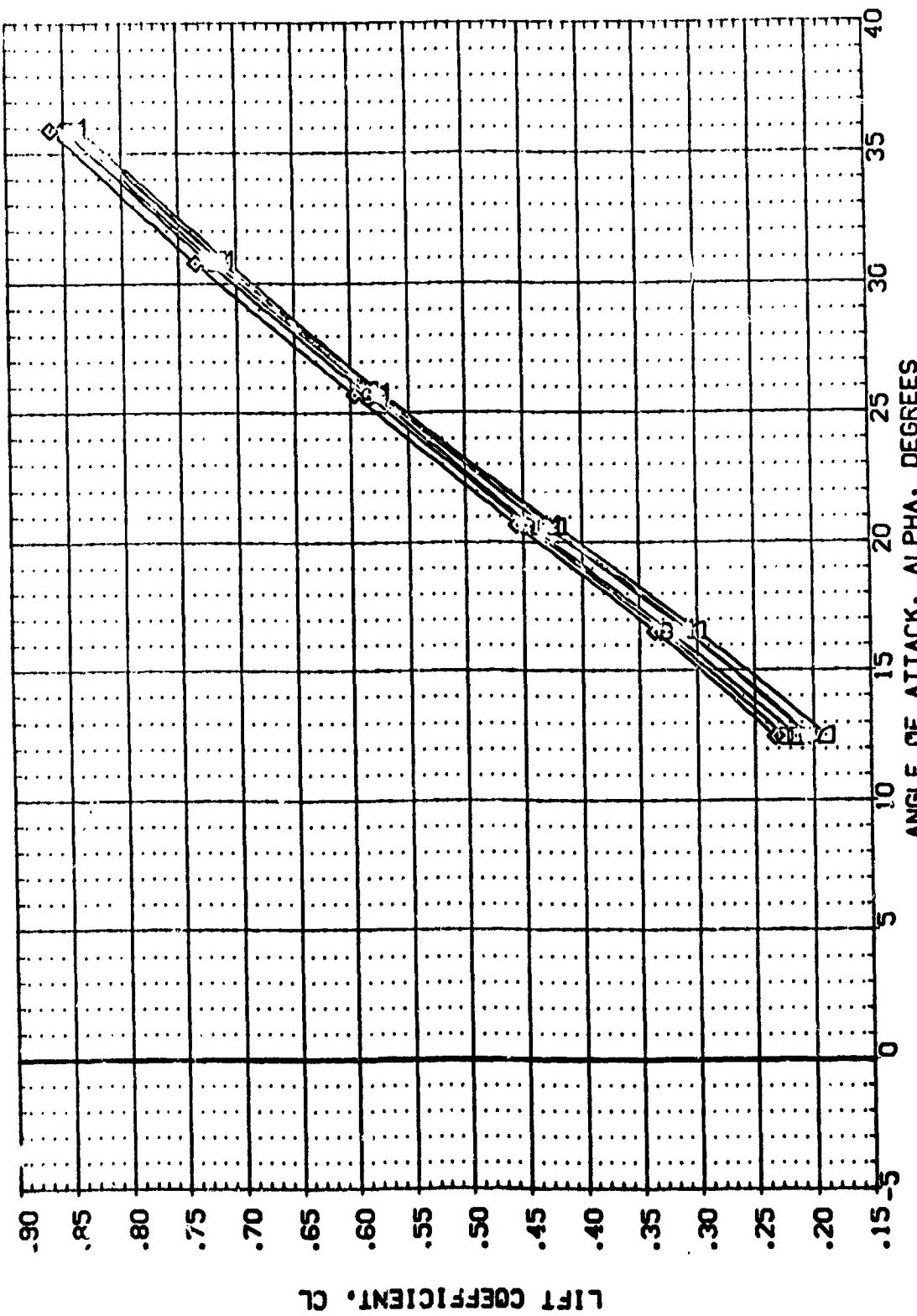
INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS STABILITY AXIS

YAW JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF REYNOLDS NUMBER  
 $(\text{MACH} = 4.00)$

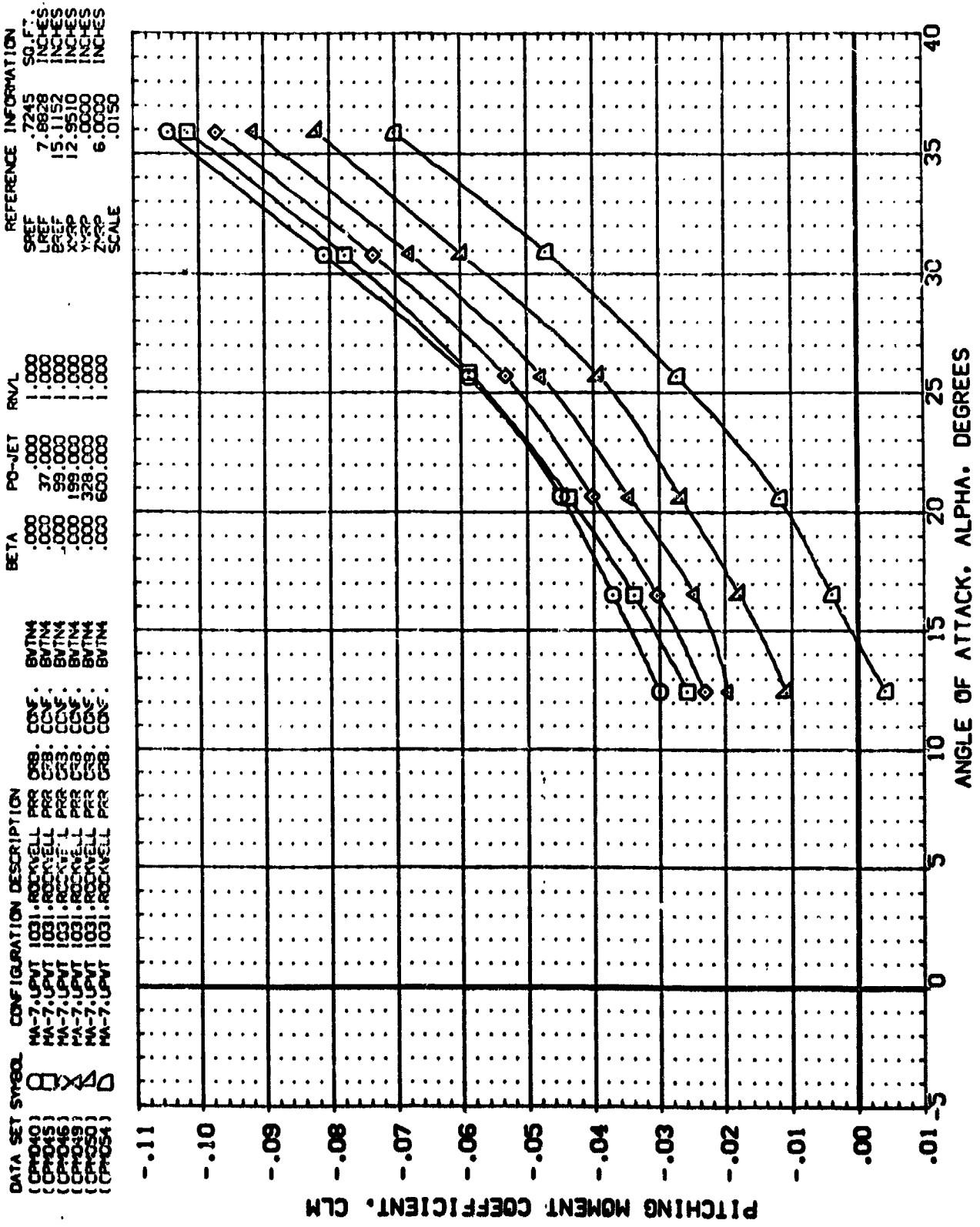
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (DP009) MA-7. UPVT 1031. ROCKWELL PR2. CONF. BVTM  
 (DP010) MA-7. UPVT 1031. ROCKWELL PR2. CONF. BVTM  
 (DP016) MA-7. UPVT 1031. ROCKWELL PR2. CONF. BVTM  
 (DP249) MA-7. UPVT 1031. ROCKWELL PR2. CONF. BVTM  
 (DP250) MA-7. UPVT 1031. ROCKWELL PR2. CONF. BVTM  
 (DP254) MA-7. UPVT 1031. ROCKWELL PR2. CONF. BVTM



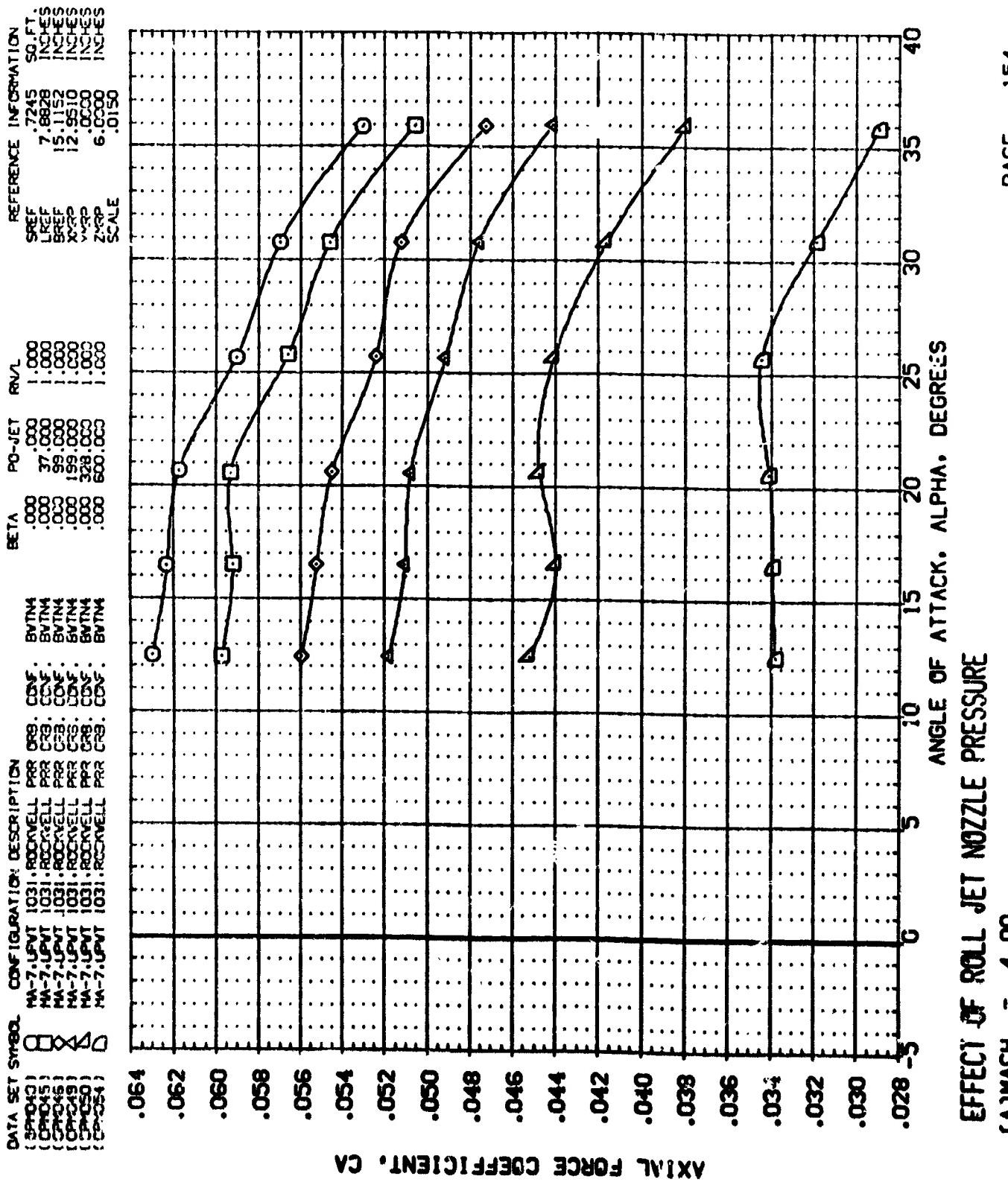
DATA SET NAME	CONFIGURATION DESCRIPTION	BETA	P0-JET	RVAL	REFERENCE INFORMATION
(CPM040)	MA-7, LPT, 1031, ROCKWELL, PRR, CRR, CONF.	BVTN4	.000	1.000	SREF .7245
(CPM045)	MA-7, LPT, 1031, ROCKWELL, PRR, CRR, CONF.	BVTN4	.003	1.000	LREF 7.8828
(CPM046)	MA-7, LPT, 1031, ROCKWELL, PRR, CRR, CONF.	BVTN4	.009	1.000	BREF 5.1532
(CPM049)	MA-7, LPT, 1031, ROCKWELL, PRR, CRR, CONF.	BVTN4	.018	1.000	XREF 1.9510
(CPM050)	MA-7, LPT, 1031, ROCKWELL, PRR, CRR, CONF.	BVTN4	.028	1.000	YREF 0.0000
(CPM054)	MA-7, LPT, 1031, ROCKWELL, PRR, CRR, CONF.	BVTN4	.060	1.000	ZREF 6.0000



EFFECT OF ROLL JET NOZZLE PRESSURE  
 $(\text{A} \text{MACH} = 4.00)$



- EFFECT OF ROLL JET NOZZLE PRESSURE  
(MACH = 4.00)

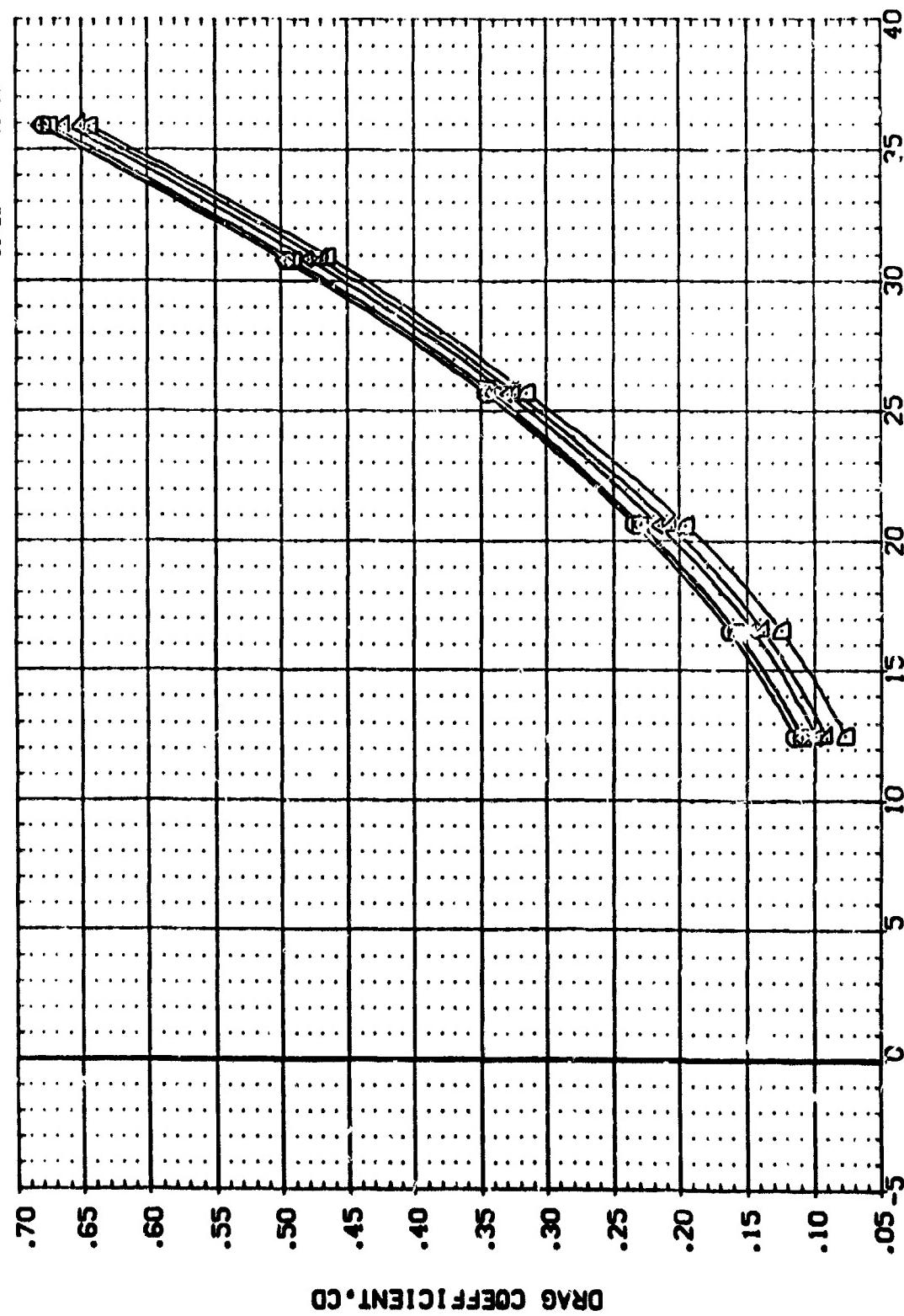


DATA SET SYMBOL CONFIGURATION DESCRIPTION

(DP040)	□	MA-7. UPVT	1031	ROCKWELL	PAS.	CONF.	BUTM
(DP045)	○	MA-7. SPVT	1031	ROCKWELL	PAS.	CONF.	BUTM
(DP046)	×	MA-7. UPVT	1031	ROCKWELL	PAS.	CONF.	BUTM
(DP049)	△	MA-7. UPVT	1031	ROCKWELL	PAS.	CONF.	BUTM
(DP050)	▲	MA-7. SPVT	1031	ROCKWELL	PAS.	CONF.	BUTM
(DP054)	□	MA-7. UPVT	1031	ROCKWELL	PAS.	CONF.	BUTM

REFERENCE INFORMATION

SREF	.7245	SC. FT. FS
LREF	7.6928	SC. FT. FS
BREF	15.1152	SC. FT. FS
XRP	12.9510	SC. FT. FS
YRP	6.0000	SC. FT. FS
ZRP	6.0000	SC. FT. FS
SCALE	.C.50	



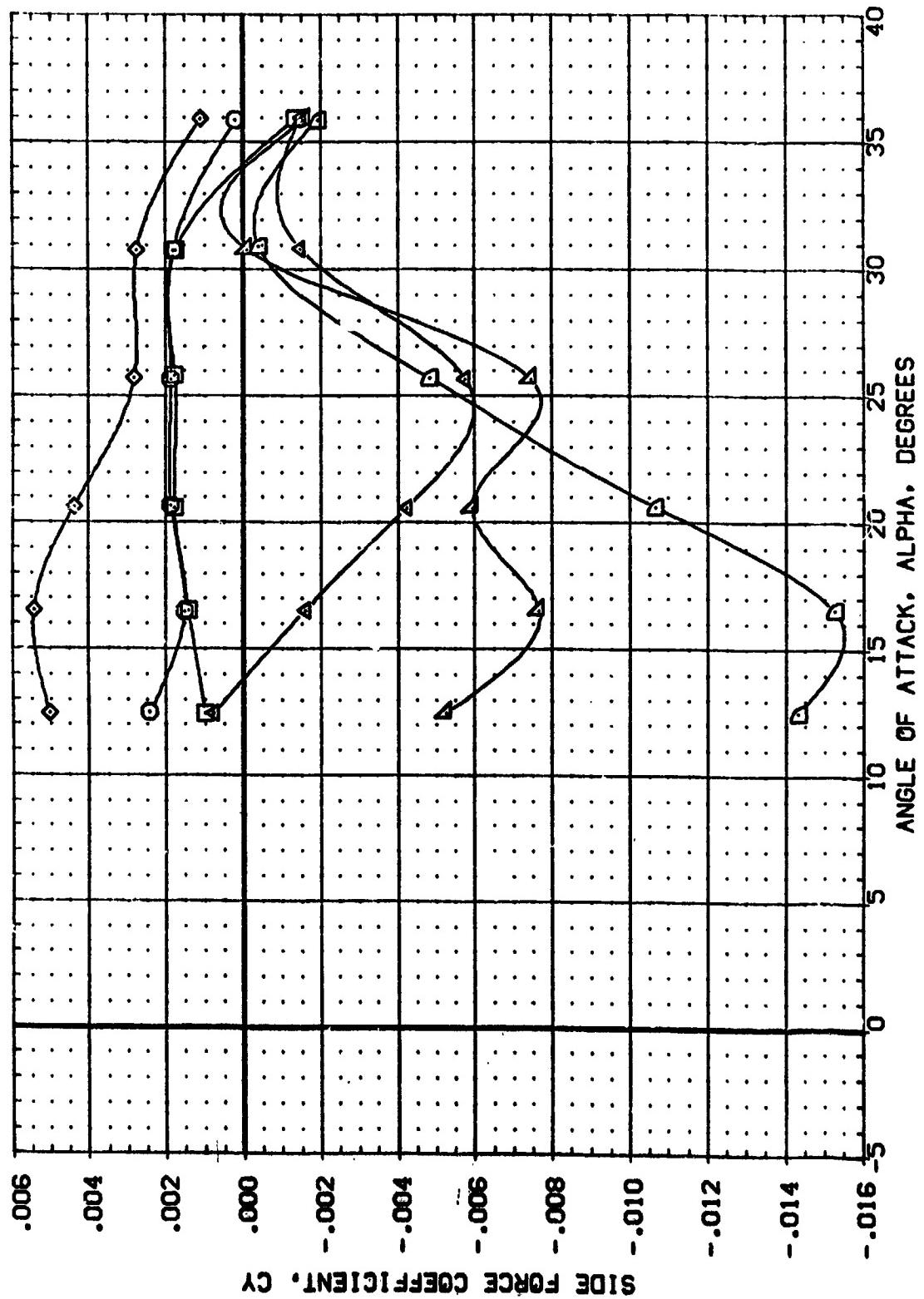
EFFECT OF ROLL JET NOZZLE PRESSURE  
( $\Delta$ MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CPH040)	MA-7. UPVT	1031. ROCKWELL	PRR	GRB.	CONF:	BV1N4
(CPH046)	MA-7. UPVT	1031. ROCKWELL	PRR	GRB.	CONF:	BV1N4
(CPH049)	MA-7. UPVT	1031. ROCKWELL	PRR	GRB.	CONF:	BV1N4
(CPH050)	MA-7. UPVT	1031. ROCKWELL	PRR	GRB.	CONF:	BV1N4
(CPH054)	MA-7. UPVT	1031. ROCKWELL	PRR	GRB.	CONF:	BV1N4

REFERENCE INFORMATION

SREF	.7245	SO. FT.
LREF	.7 .9828	INCHES
BREF	15.1152	INCHES
XMRP	12.9510	INCHES
YMRP	.0000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	

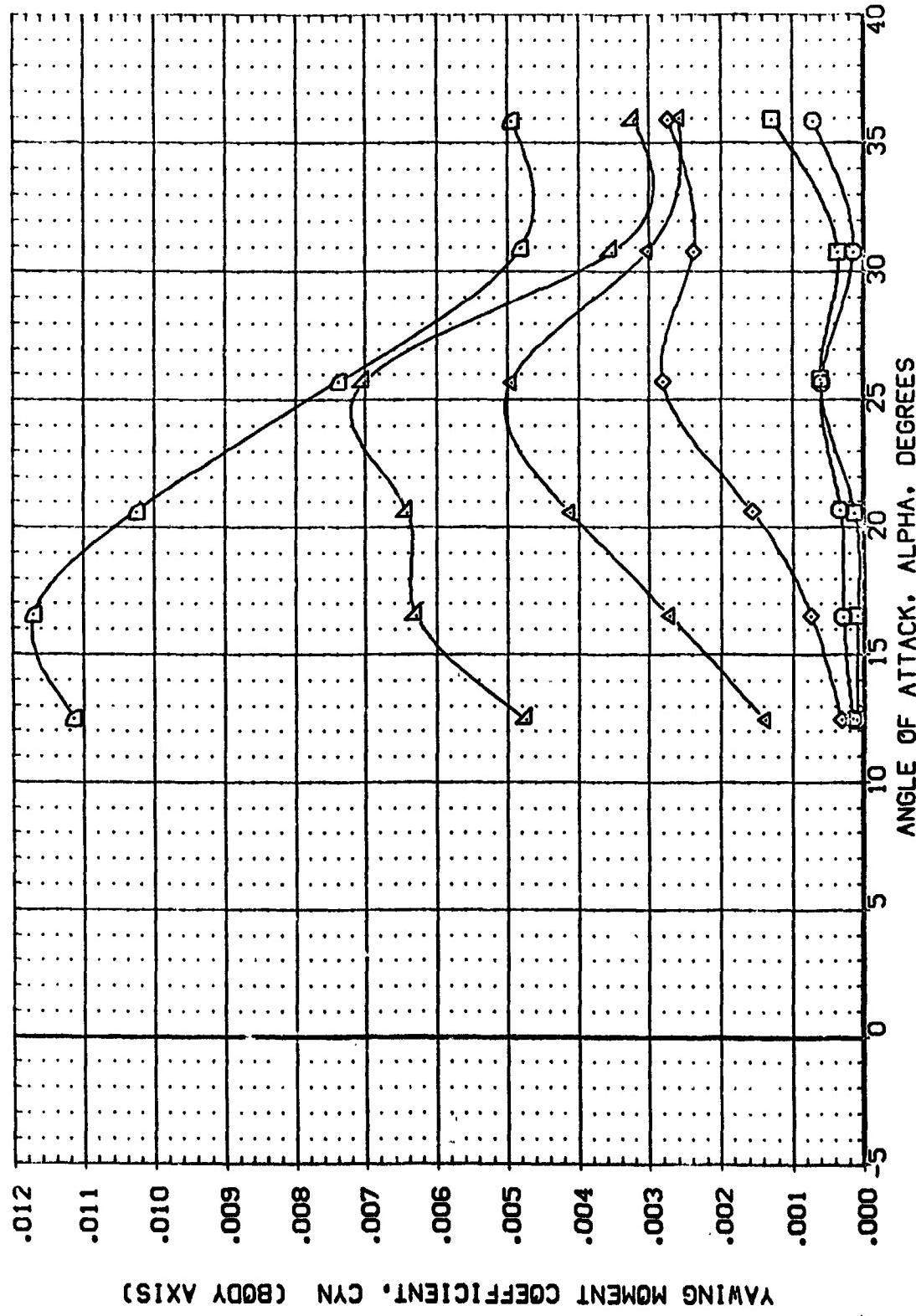


EFFECT OF ROLL JET NOZZLE PRESSURE

( $\Delta$ MACH = 4.00

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	PO-JET	RNL	REFERENCE INFORMATION
(OPD40)	MA-7. UPVT	.000	.000	1.000	SREF .7245 SC.FT.
(OPD41)	MA-7. UPVT	.031	.000	.000	LREF 7.8828 IN.FT.
(OPD42)	MA-7. UPVT	.031	.000	.000	BREF 15.1152 IN.FT.
(OPD43)	MA-7. UPVT	.031	.000	.000	XMRP 12.9510 IN.FT.
(OPD44)	MA-7. UPVT	.031	.000	.000	YMRP .0000 IN.FT.
(OPD45)	MA-7. UPVT	.031	.000	.000	ZMRP .0000 IN.FT.
(OPD46)	MA-7. UPVT	.031	.000	.000	SCALE .0150



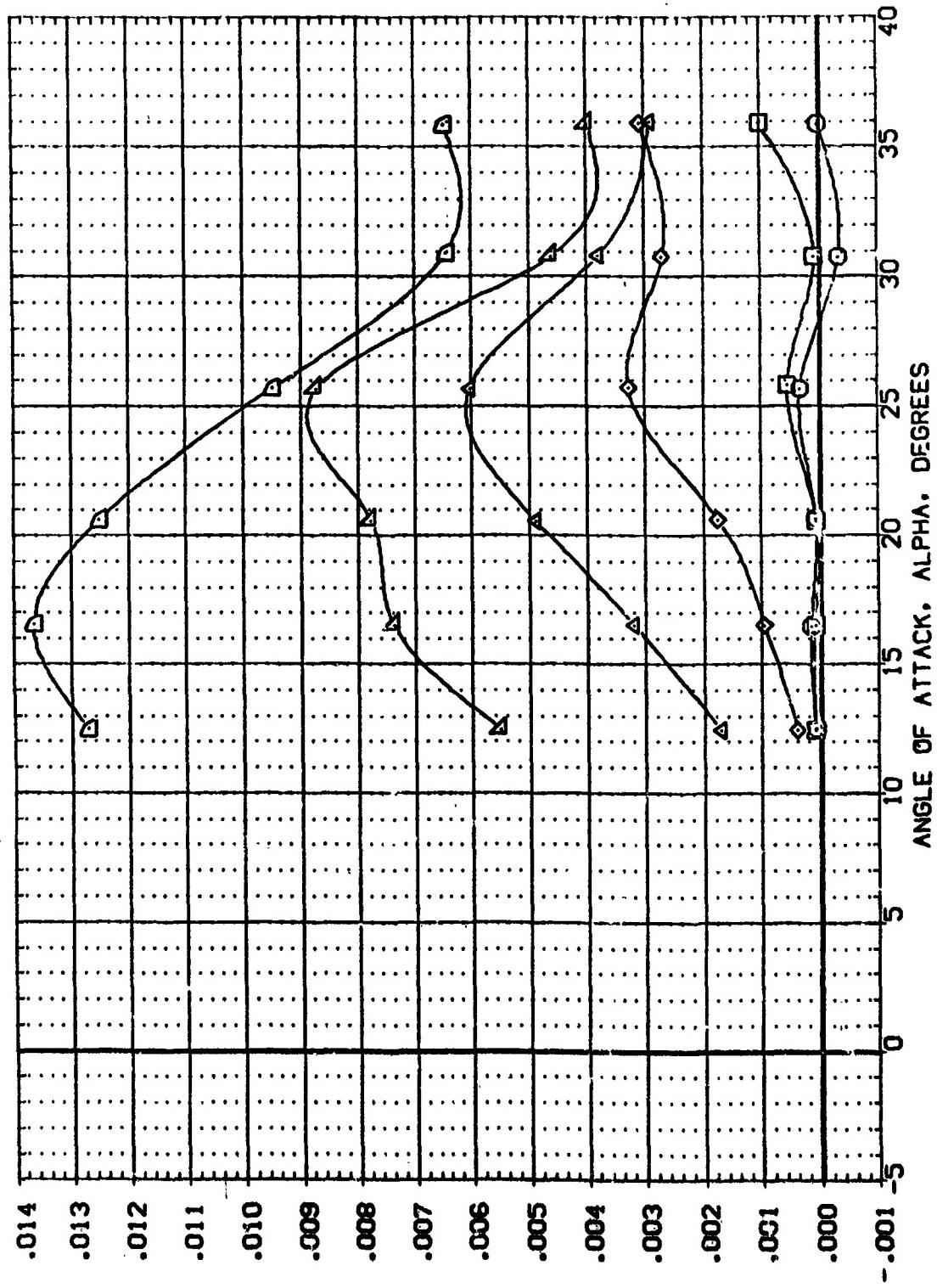
EFFECT OF ROLL JET NOZZLE PRESSURE  
(A)MACH = 4.00

DATA SET Symb. CONFIGURATION DESCRIPTION

(CPM040)	MA-7-JPVT	1031-ROCKWELL	PRR	CRB.	CONF:	BVTN4
(CPM045)	MA-7-JPVT	1031-ROCKWELL	PRR	CRB.	CONF:	BVTN4
(CPM046)	MA-7-JPVT	1031-ROCKWELL	PRR	CRB.	CONF:	BVTN4
(CPM049)	MA-7-JPVT	1031-ROCKWELL	PRR	CRB.	CONF:	BVTN4
(CPM050)	MA-7-JPVT	1031-ROCKWELL	PRR	CRB.	CONF:	BVTN4
(CPM054)	MA-7-JPVT	1031-ROCKWELL	PRR	CRB.	CONF:	BVTN4

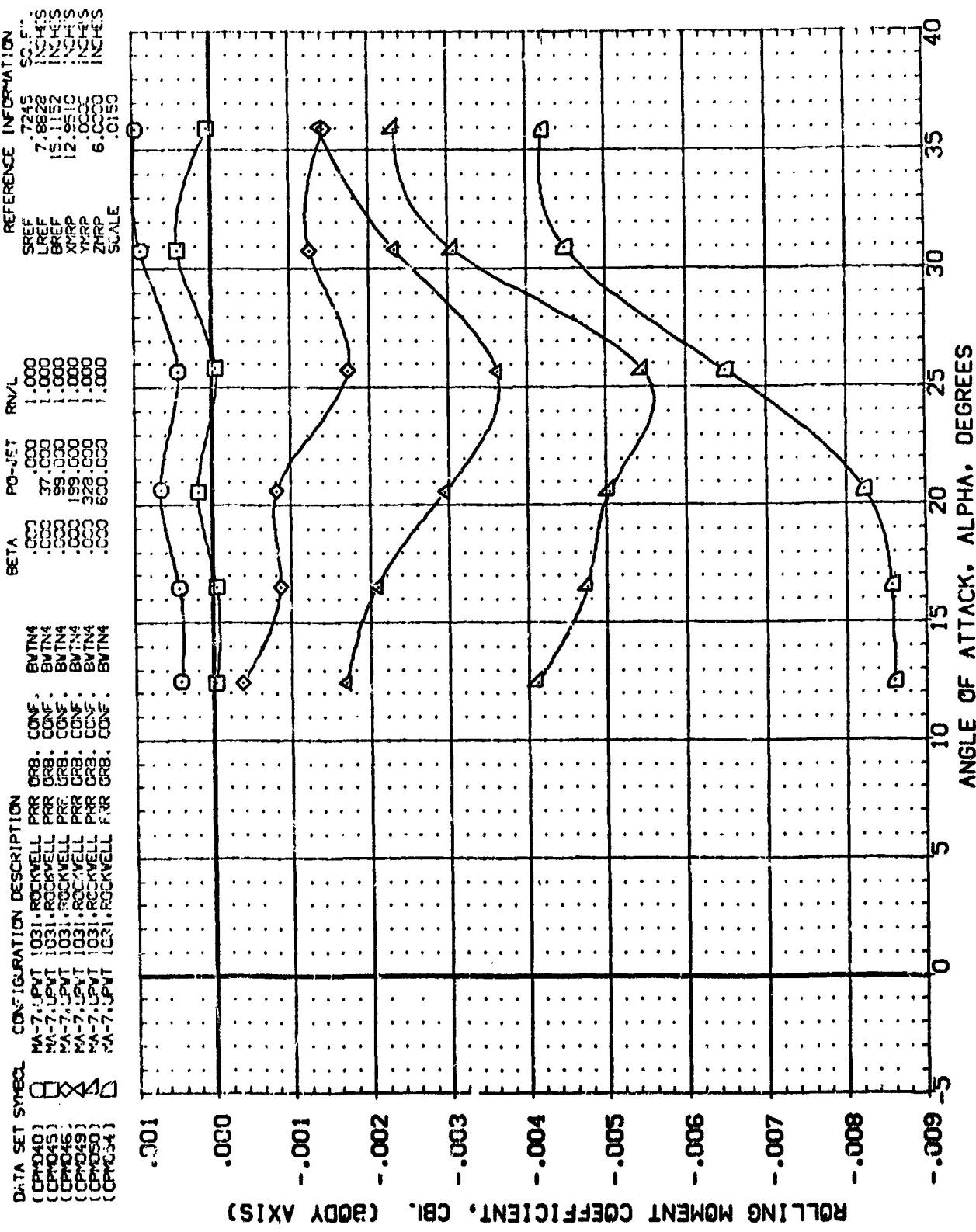
REFERENCE INFORMATION

SREF	7245	INCHES
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XMRP	12.9513	INCHES
YMRP	6.0200	INCHES
ZMRP	6.0250	INCHES
SCALE	.0150	



EFFECT OF ROLL JET NOZZLE PRESSURE

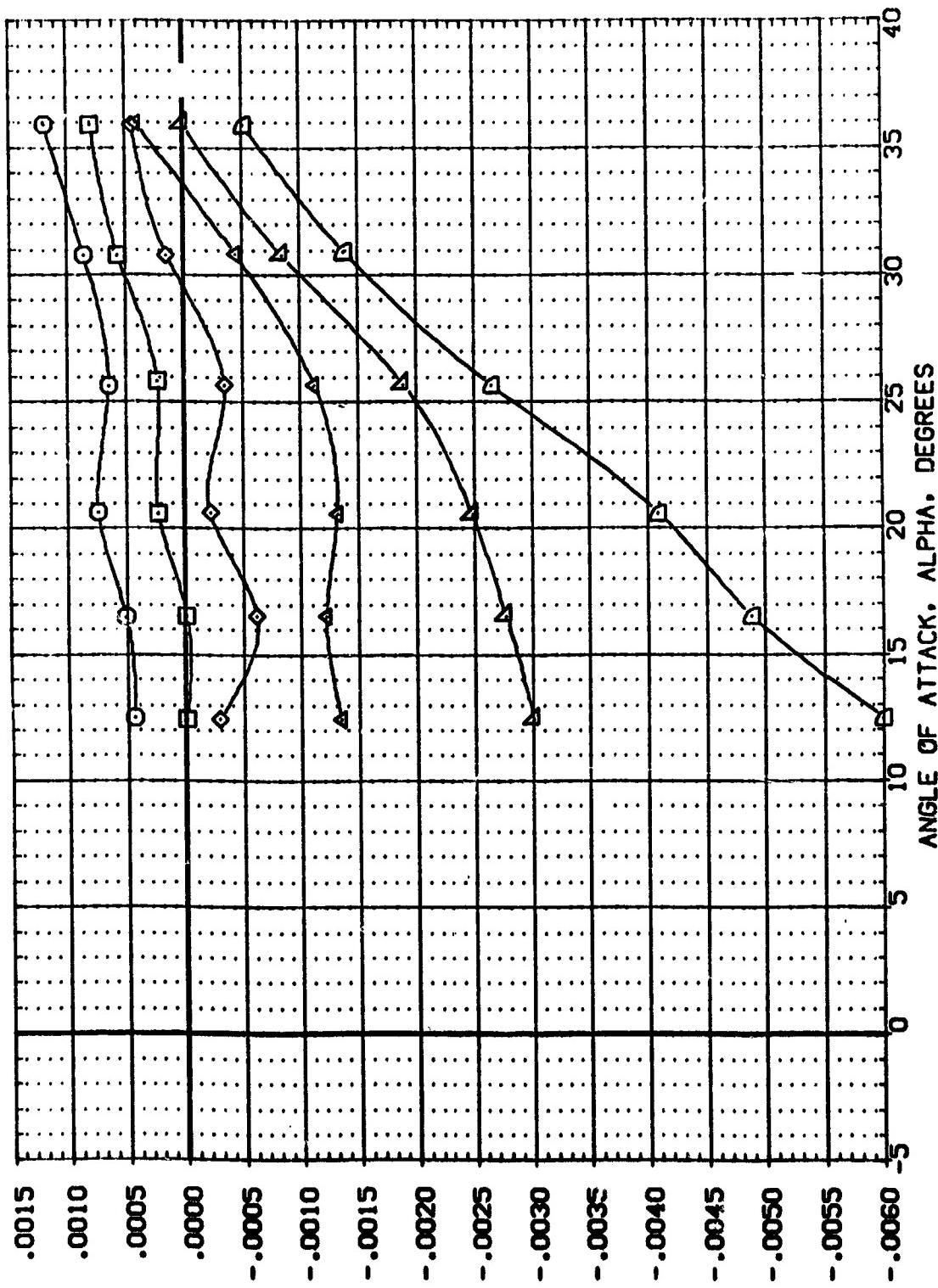
( $\Delta$ MACH = 4.00)



EFFECT OF ROLL JET NOZZLE PRESSURE  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

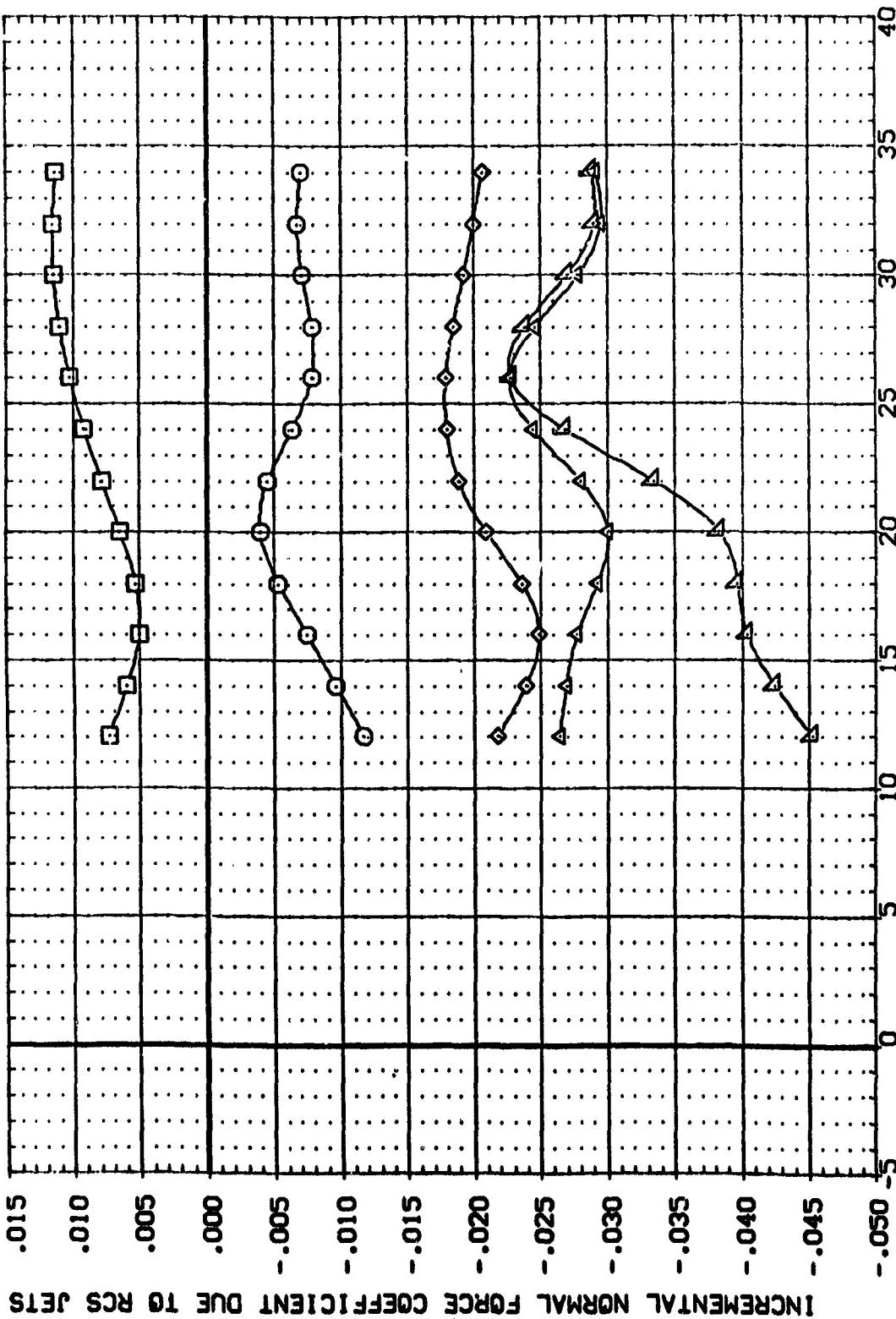
(CFP040)	MA-7-JPT	1031	ROCKWELL	PRR	CONF.
(CFP045)	MA-7-JPT	1031	ROCKWELL	PRR	CONF.
(CFP046)	MA-7-JPT	1031	ROCKWELL	PRR	CONF.
(CFP049)	MA-7-JPT	1031	ROCKWELL	PRR	CONF.
(CFP050)	MA-7-JPT	1031	ROCKWELL	PRR	CONF.
(CFP054)	MA-7-JPT	1031	ROCKWELL	PRR	CONF.



EFFECT OF ROLL JET NOZZLE PRESSURE  
(MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APT045)  $\square$  MA-7, UPNT 1031, ROCKWELL PRR CONF. BWTN4  
 (APT046)  $\square$  MA-7, UPNT 1031, ROCKWELL PRR CONF. BWTN4  
 (APT049)  $\diamond$  MA-7, UPNT 1031, ROCKWELL PRR CONF. BWTN4  
 (APT050)  $\diamond$  MA-7, UPNT 1031, ROCKWELL PRR CONF. BWTN4  
 (APT054)  $\triangle$  MA-7, UPNT 1031, ROCKWELL PRR CONF. BWTN4

REFERENCE INFORMATION  
 SREF .7245 SO.FT.  
 LREF 7.8928 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF 6.0000 INCHES  
 ZREF .0150 INCHES  
 SCALE



INCREMENTAL NORMAL FORCE COEFFICIENT DUE TO RCS JETS

ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET NOZZLE PRESSURE  
 (MACH = 4.00)  
 ANGLE OF ATTACK, ALPHA, DEGREES  
 PAGE 161

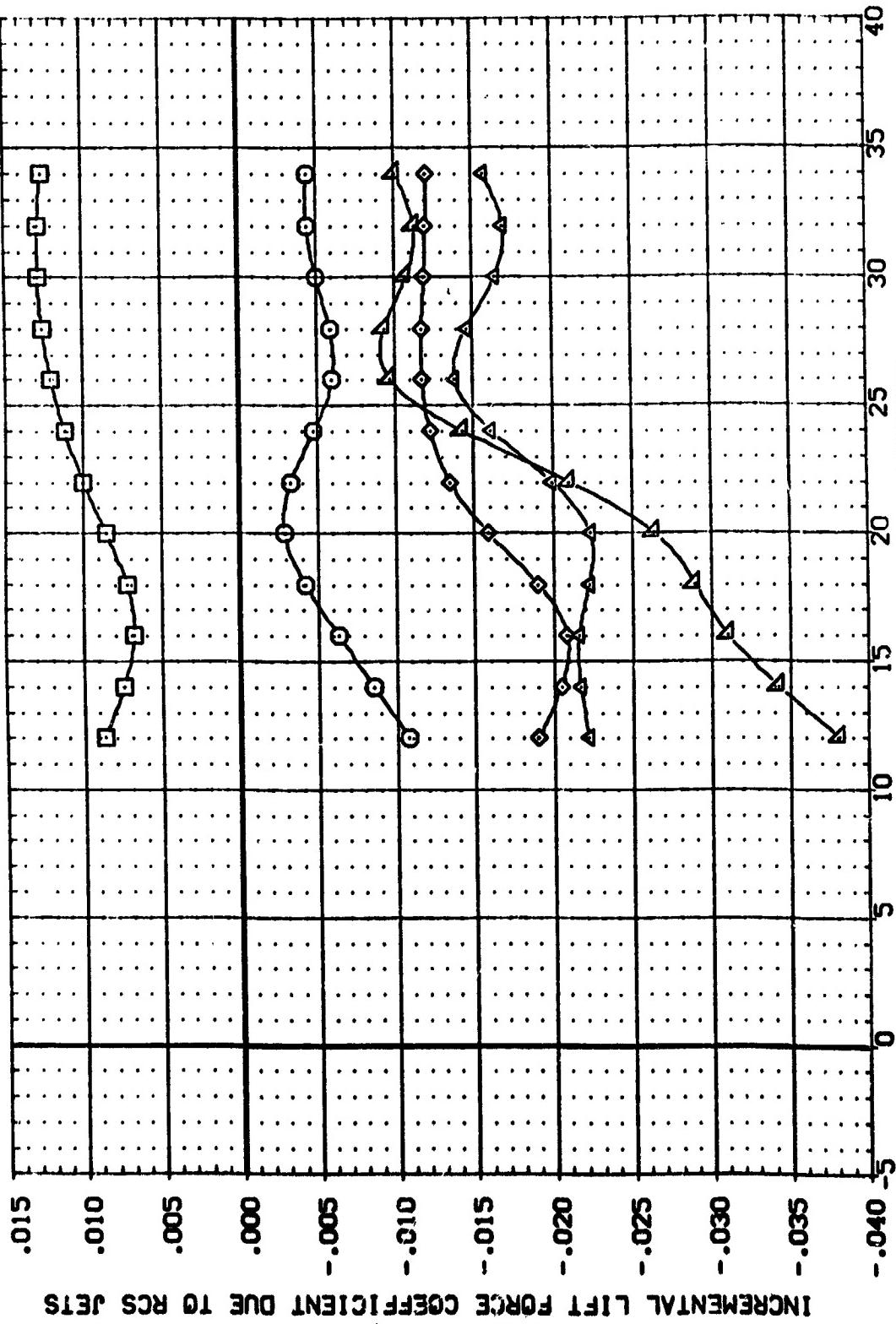
DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APPD5)	□	MA-7. UPV1 1031. RCKWELL PRR
(APPD6)	□	MA-7. UPV1 1031. RCKWELL PRR
(APPD9)	△	MA-7. UPV1 1031. RCKWELL PRR
(APPD0)	△	MA-7. UPV1 1031. RCKWELL PRR
(APPD4)	△	MA-7. UPV1 1031. RCKWELL PRR

REFERENCE INFORMATION

SREF	.7245	SO. FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
ZREF	12.9510	INCHES
XRP	.0000	INCHES
YRP	.0000	INCHES
ZRP	.0150	INCHES

SCALE .0150



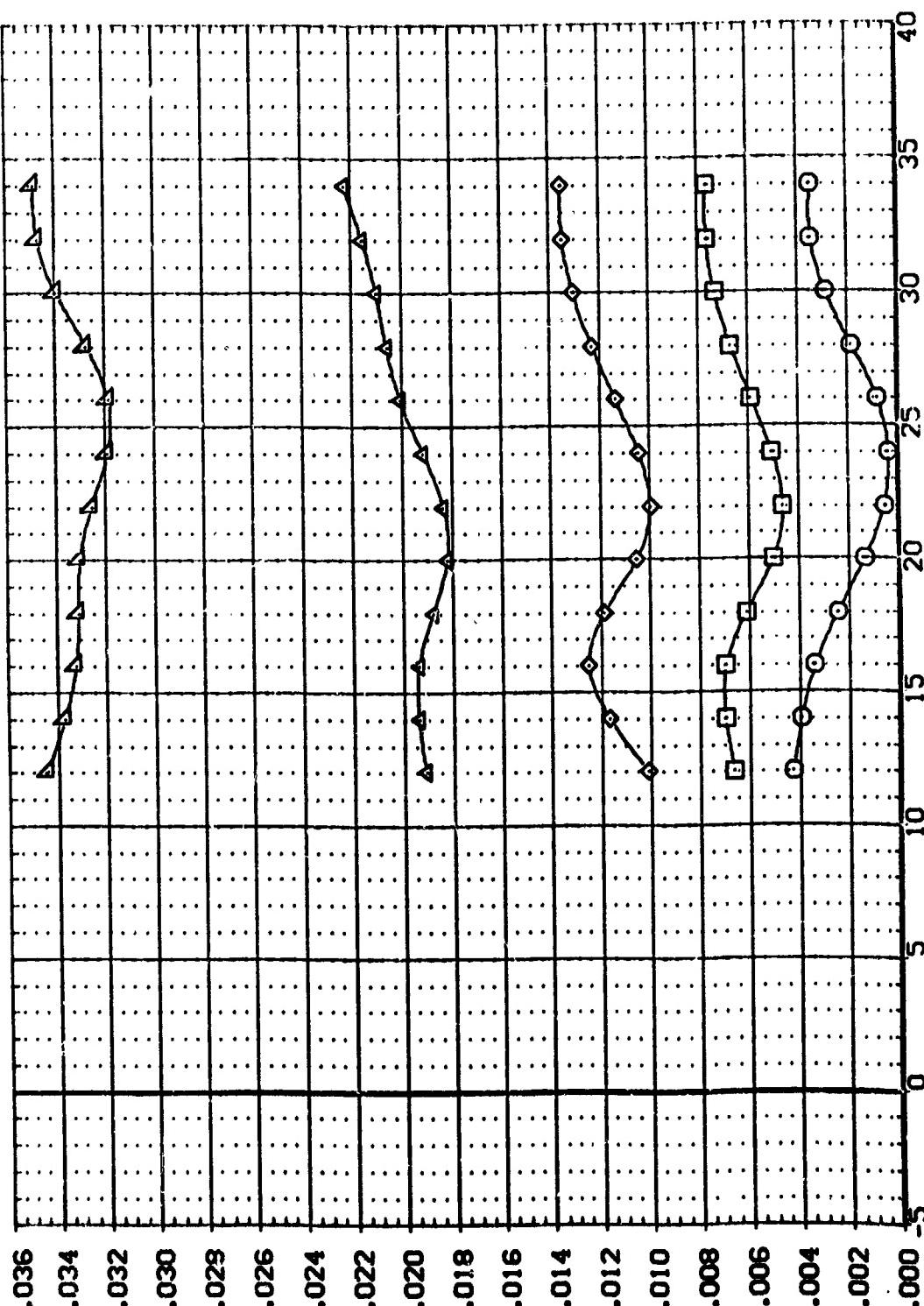
ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET NOZZLE PRESSURE  
(MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APD45)	MA-7. UPVT	1031. ROCKWELL PRR ORB.	CONF.	BVTN4
(APD46)	MA-7. UPVT	1031. ROCKWELL PRR ORB.	CONF.	BVTN4
(APD49)	MA-7. UPVT	1031. ROCKWELL PRR ORB.	CONF.	BVTN4
(APD50)	MA-7. UPVT	1031. ROCKWELL PRR ORB.	CONF.	BVTN4
(APD54)	MA-7. UPVT	1031. ROCKWELL PRR ORB.	CONF.	BVTN4

REFERENCE INFORMATION  
 SREF .7245 SC. FT.  
 LREF 7.6273 INCHES  
 BREF 15.152 INCHES  
 XMRP 12.850 INCHES  
 YMRP 6.000 INCHES  
 ZMRP 6.000 INCHES  
 SCALE

INCREMENTAL PITCHING MOMENT COEFFICIENT DUE TO RCS JETS



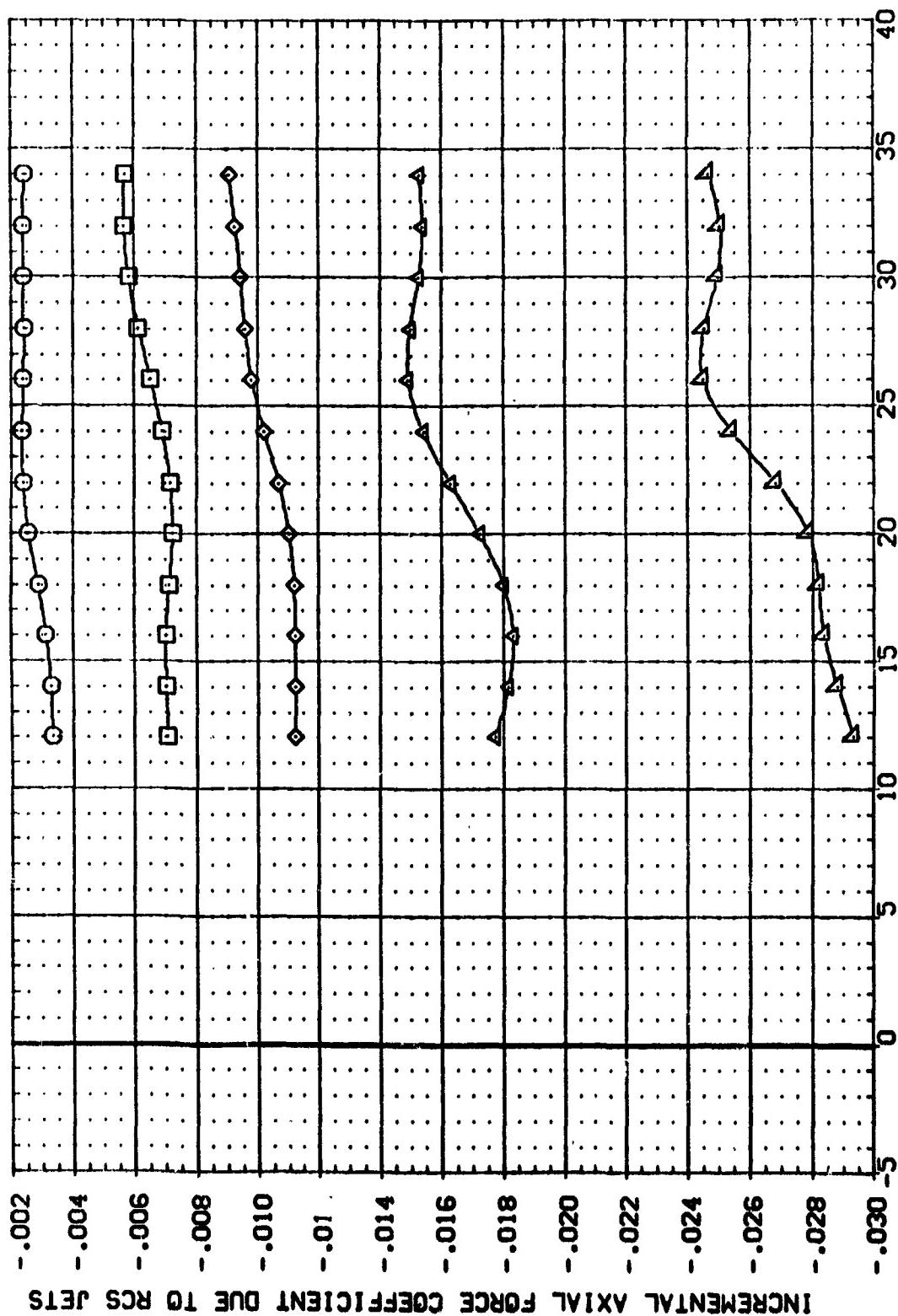
ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET NOZZLE PRESSURE

(MACH = 4.00)

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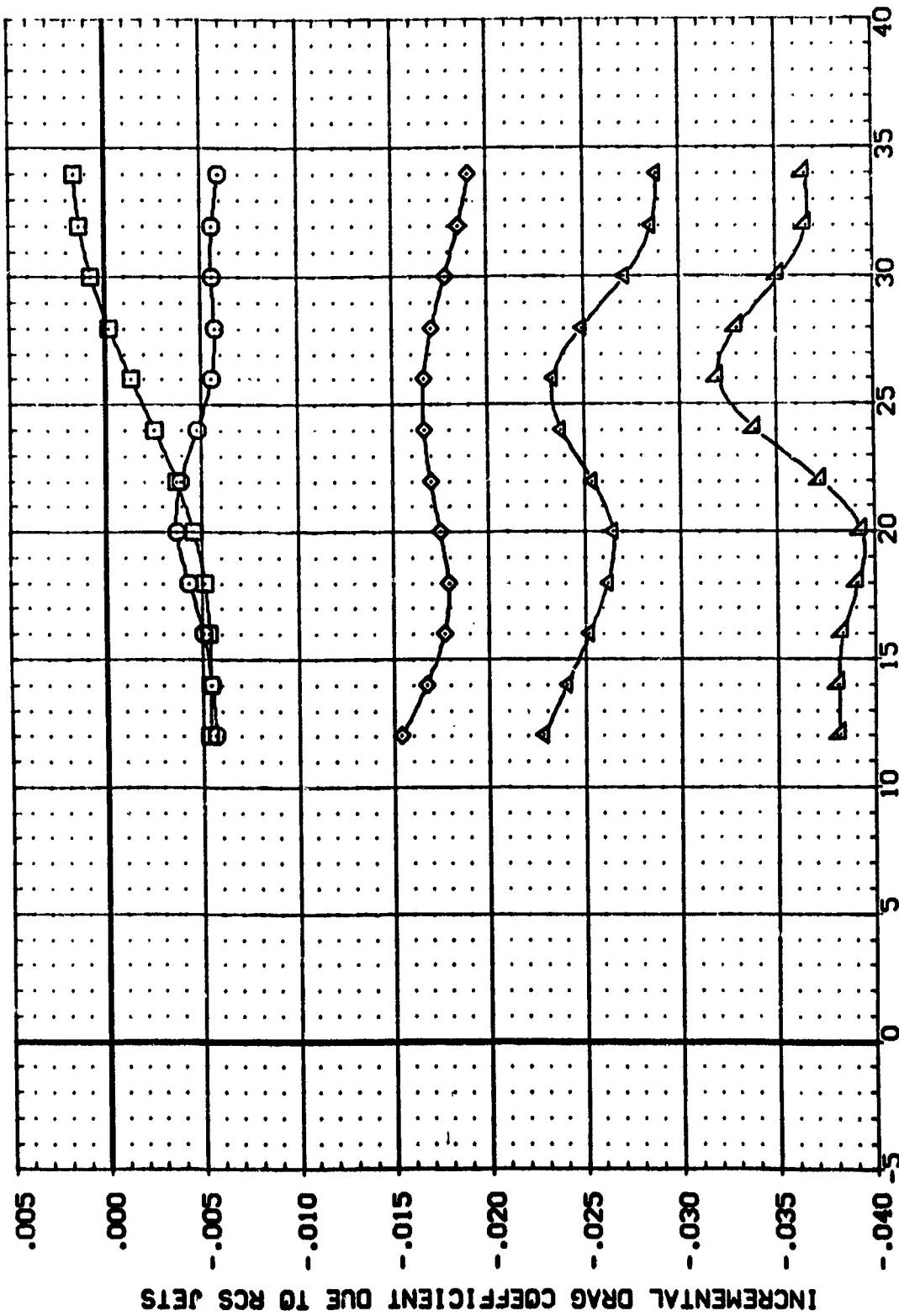
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APD45) MA-7, UPVT 1031, ROCKWELL PRR CRB, CONF: BVTN4  
 (APD46) MA-7, LPVT 1031, ROCKWELL PRR CRB, CONF: BVTN4  
 (APC49) MA-7, UPVT 1031, ROCKWELL PRR CRB, CONF: BVTN4  
 (APC50) MA-7, UPVT 1031, ROCKWELL PRR CRB, CONF: BVTN4  
 (APC54) MA-7, UPVT 1031, ROCKWELL PRR CRB, CONF: BVTN4

REFERENCE INFORMATION  
 SREF .7245 SO.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 2.9510 INCHES  
 YREF .0000 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150



ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET NOZZLE PRESSURE  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL		CONFIGURATION DESCRIPTION		BETA	D <sub>L</sub> P <sub>O-J</sub>	R <sub>N</sub> /L	REFERENCE INFORMATION
(APD-5)	□	MA-7. UPN	1031. ROCKWELL	PFR	.000	.000	SREF .7245 SQ.FT.
(APD-6)	□	MA-7. UPN	1031. ROCKWELL	PFR	.000	.000	LREF .78828 INCHES
(APD-9)	○	MA-7. UPN	1031. ROCKWELL	PFR	.000	.000	BREF 15.1152 INCHES
(APD-10)	○	MA-7. UPN	1031. ROCKWELL	PFR	.000	.000	XMRP 12.9510 INCHES
(APD-14)	△	MA-7. UPN	1031. ROCKWELL	PFR	.000	.000	YMRP .00000 INCHES
		MA-7. UPN	1031. ROCKWELL	PFR	.000	.000	ZMRP 6.00000 INCHES
				CONF.	BUTN4		SCALE .0150



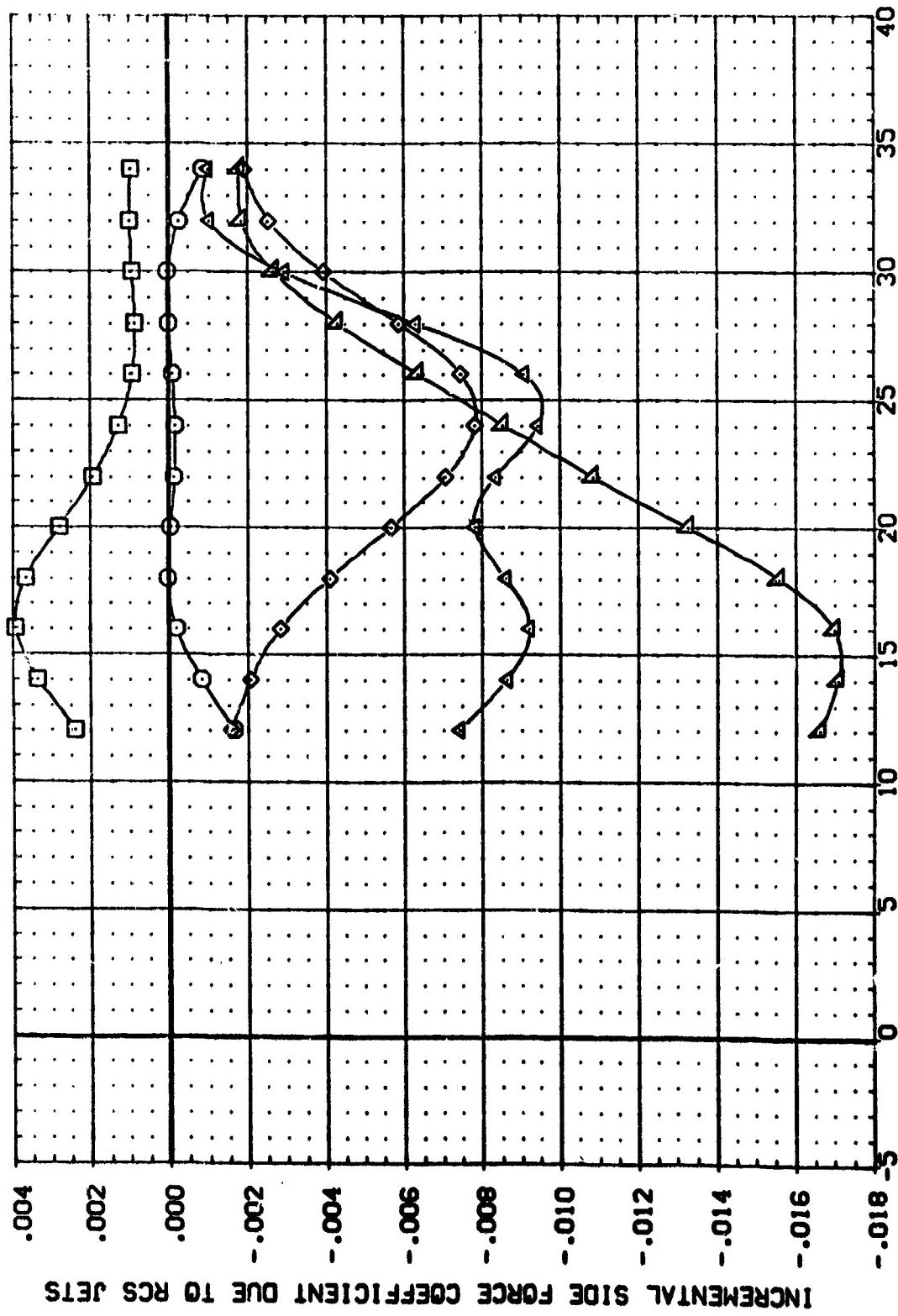
ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET NOZZLE PRESSURE

(A)MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APD05)	□	MA-7, UPNT 1031, ROCKWELL PRR
(APD06)	○	MA-7, UPNT 1031, ROCKWELL PRR
(APD08)	×	MA-7, UPNT 1031, ROCKWELL PRR
(APD09)	△	MA-7, UPNT 1031, ROCKWELL PRR
(APD10)	▲	MA-7, UPNT 1031, ROCKWELL PRR
(APD11)	◆	MA-7, UPNT 1031, ROCKWELL PRR

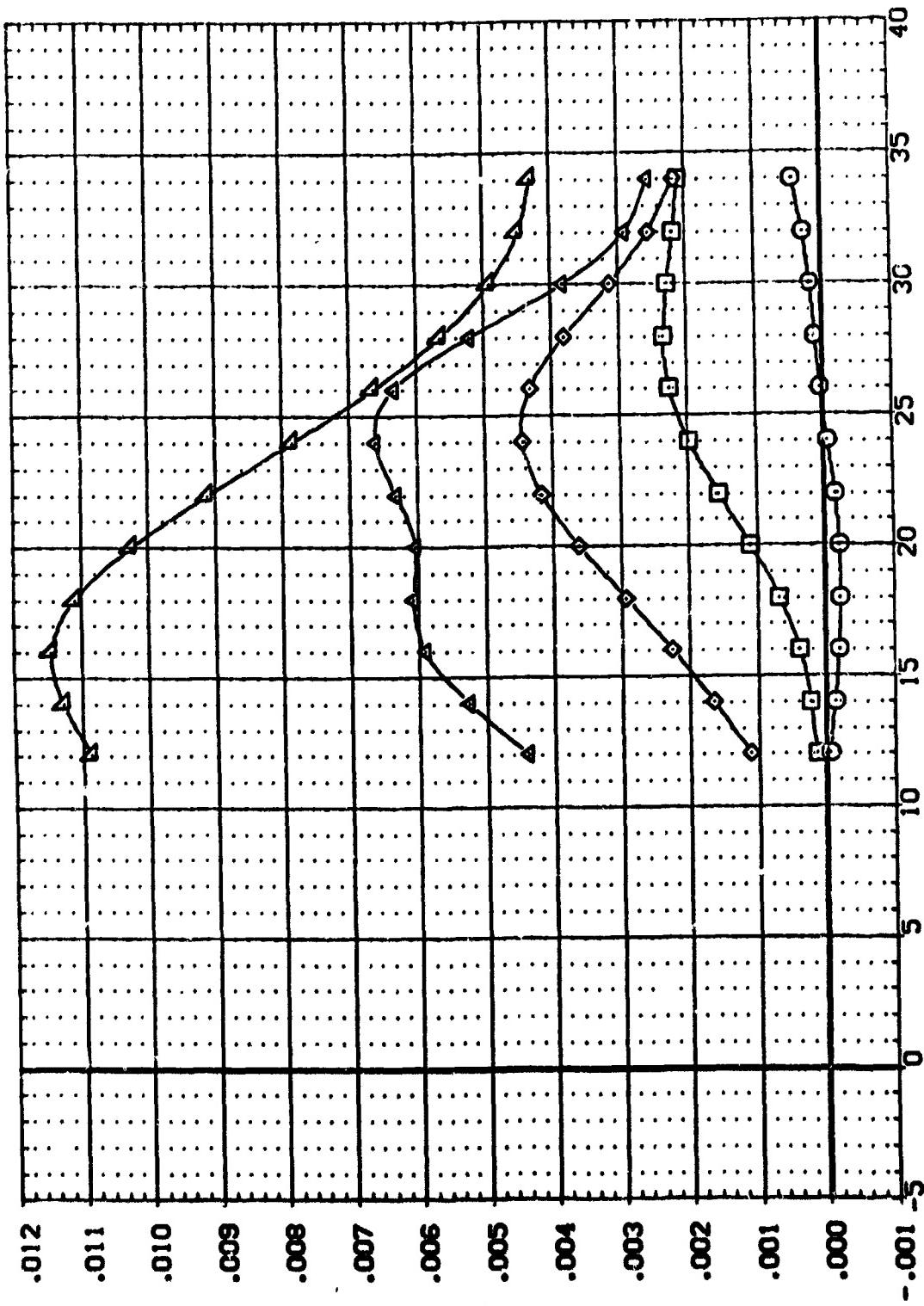
REFERENCE INFORMATION  
 SREF .7245 S2, FT.  
 LREF 7.8928 TES  
 BREF 15.152 TES  
 XMRP 12.910 C  
 YMRP 10.000 C  
 ZMRP 6.000 C  
 SCALE .C.150



INCREMENTAL SIDE FORCE COEFFICIENT DUE TO RCS JETS  
 (A)MACH = 4.00  
 ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF RCS JET PRESSURE  
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DATA SET SNAME: CONFIGURATION DESCRIPTION  
 (APM045) MA-7, UPWT 1031, ROCKWELL, PRR, CCR, CONN.  
 (APM046) MA-7, UPWT 1031, ROCKWELL, PRR, CCR, CONN.  
 (APM049) MA-7, UPWT 1031, ROCKWELL, PRR, CCR, CONN.  
 (APM050) MA-7, UPWT 1031, ROCKWELL, PRR, CCR, CONN.  
 (APM054) MA-7, UPWT 1031, ROCKWELL, PRR, CCR, CONN.

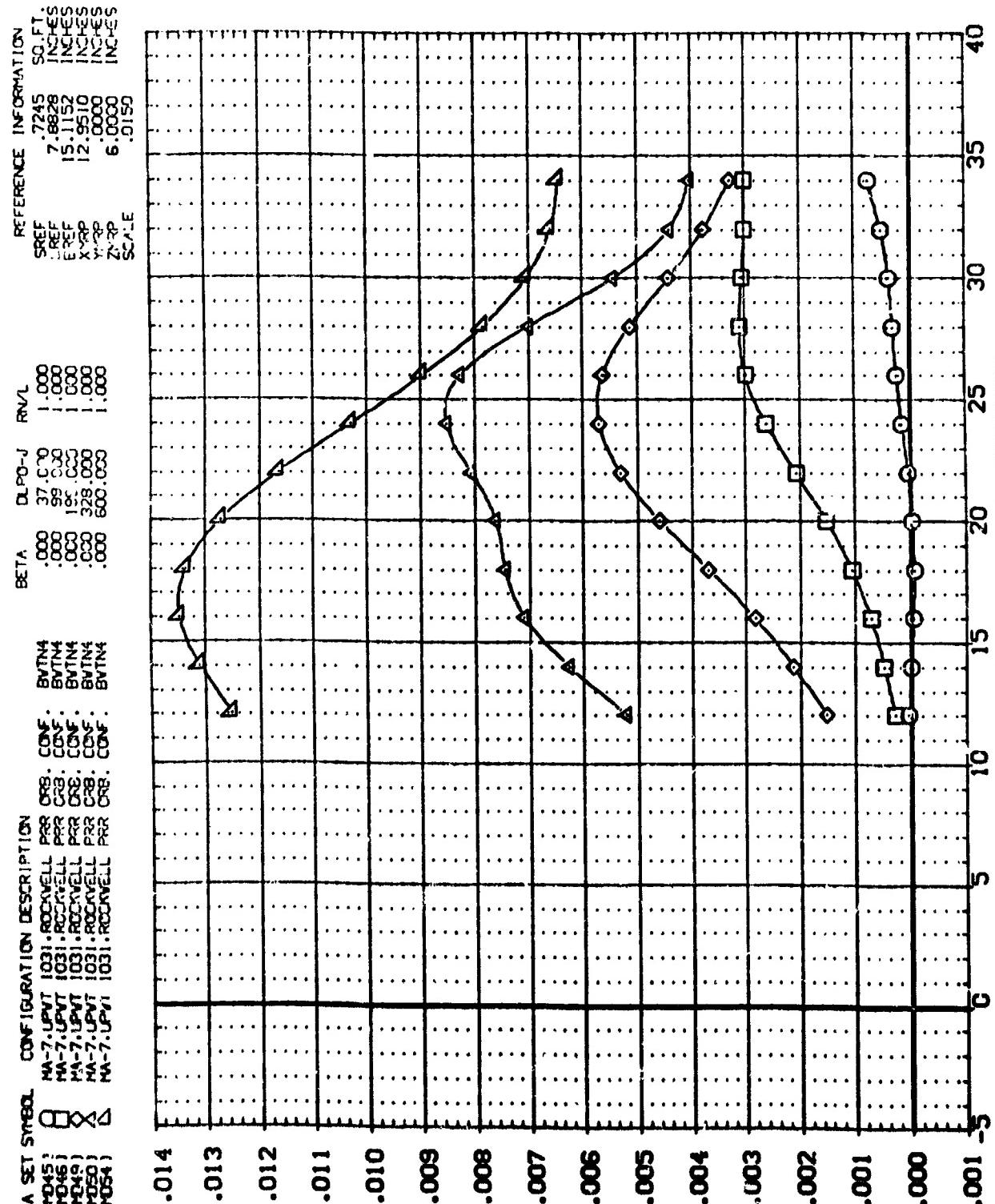
REFERENCE INFORMATION  
 SREF .7245 SO.FT.  
 LREF 7.8828 INCHES  
 XREF 15.1152 INCHES  
 YREF 12.9510 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150



INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (BODY AXIS)

(A) MACH = 4.00

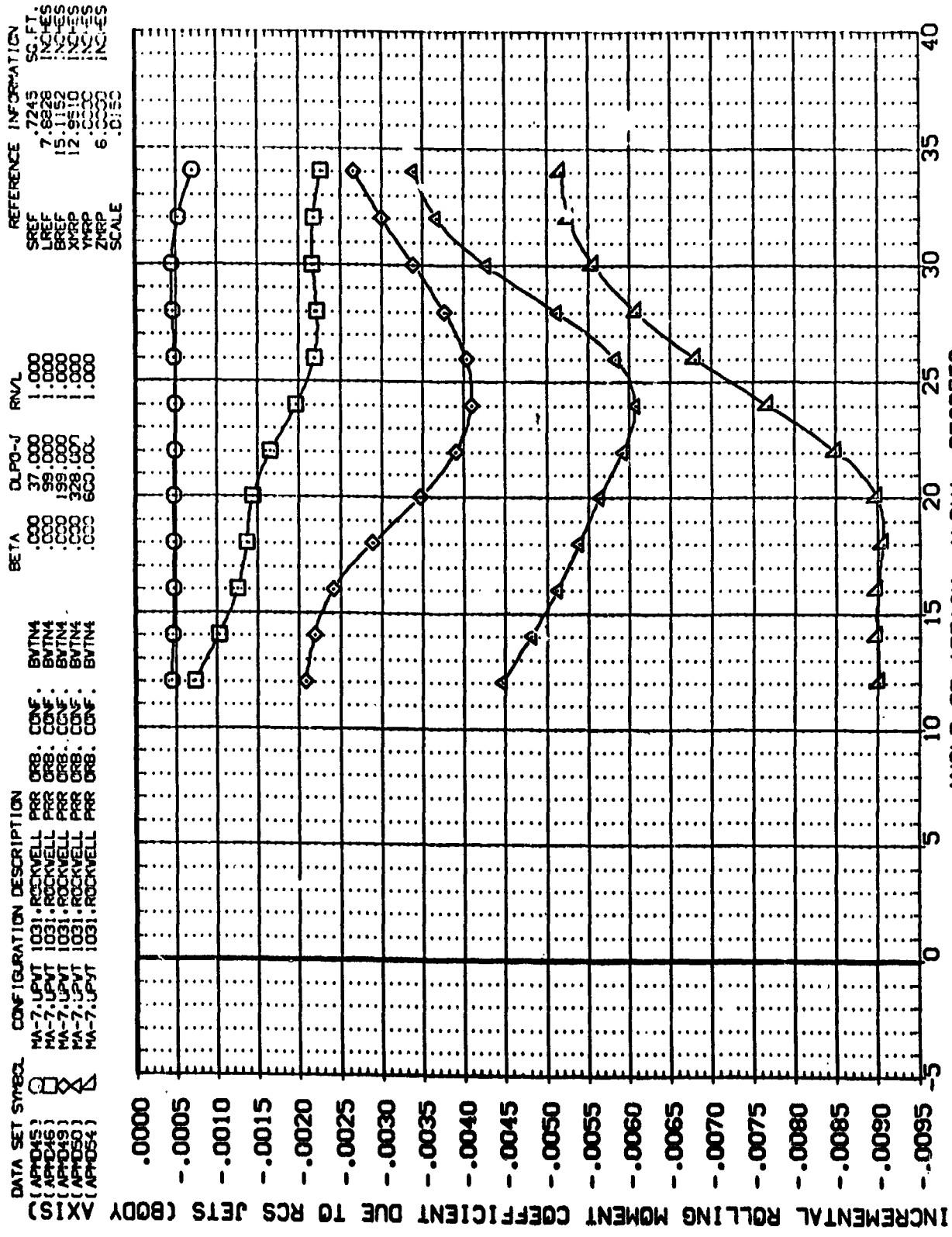
ROLL JET INTERFERENCE (INCREMENTAL DATA). EFFECT OF JET NOZZLE PRESSURE  
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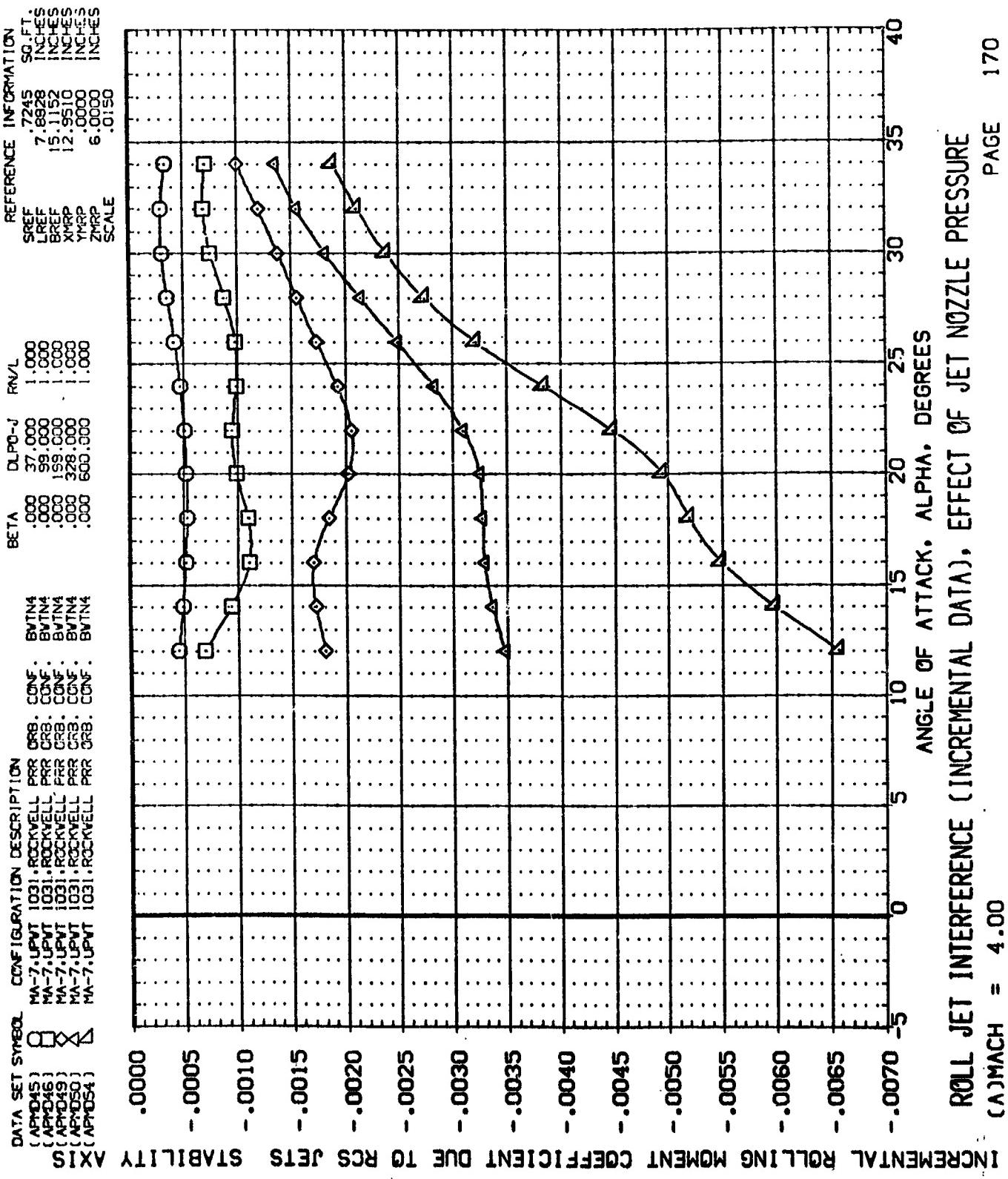
INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (STABILITY AXIS)

ROLL JET INTERFERENCE (INCREMENTAL DATA). EFFECT OF JET NOZZLE PRESSURE  
(A)MACH = 4.00

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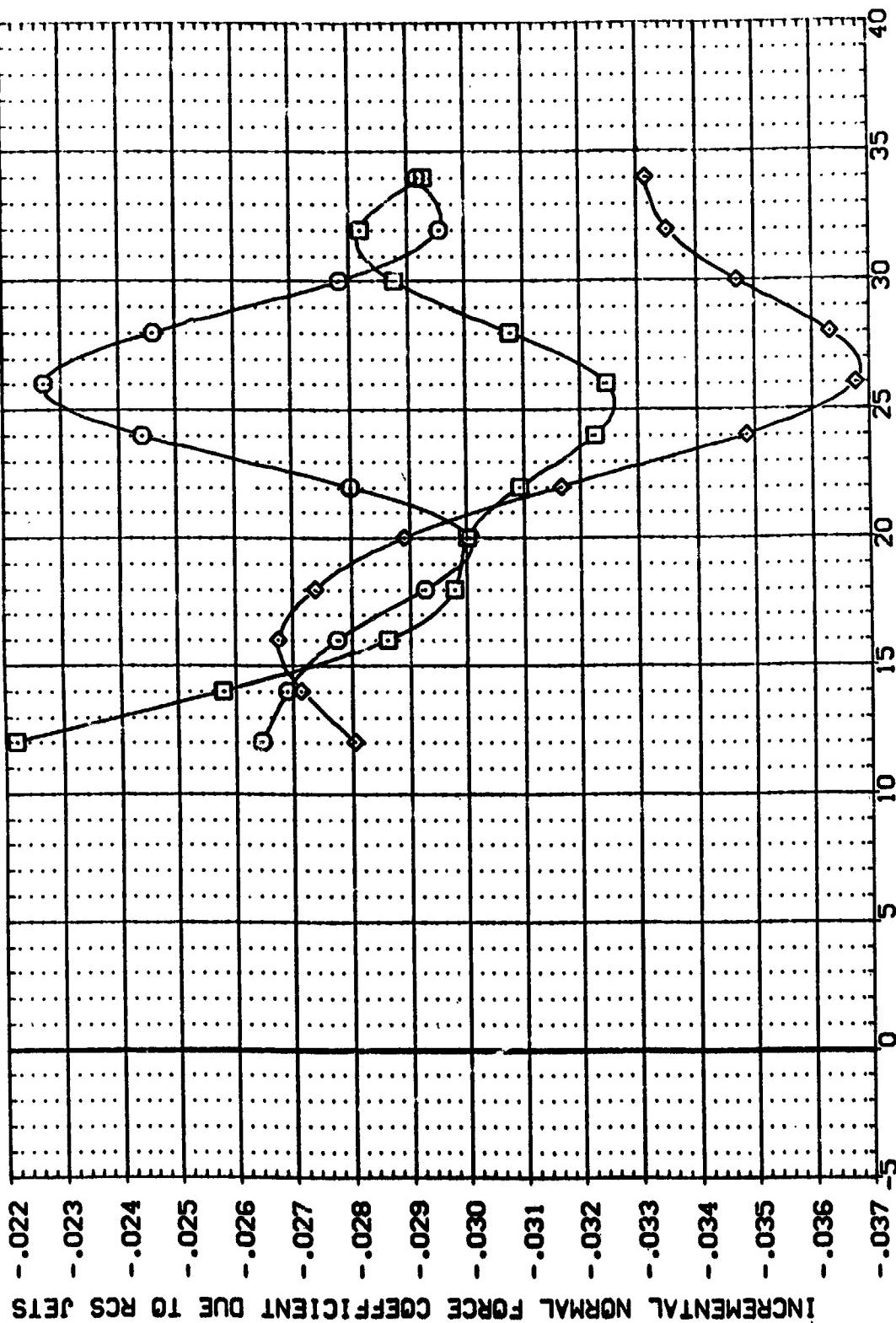


ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF JET NOZZLE PRESSURE  
( $\alpha_{MACH} = 4.00$ )



DATA SET SNAME: CONFIGURATION DESCRIPTION  
 (APD01) MA-7. UPVT 1031. ROCKWELL PRR ORB. CONF: BMTN4  
 (APD02) MA-7. UPVT 1031. ROCKWELL PRR ORB. CONF: BMTN4  
 (APD03) MA-7. UPVT 1031. ROCKWELL PRR ORB. CONF: BMTN4

REFERENCE INFORMATION  
 SREF 7.7245 SQ.FT.  
 LREF 7.8828 TONS  
 BREF 15.1152 TONS  
 XMRP 12.9510 TONS  
 YMRP 6.0000 TONS  
 ZMRP .0150 TONS  
 SCALE



ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECTIVENESS IN SIDESLIP

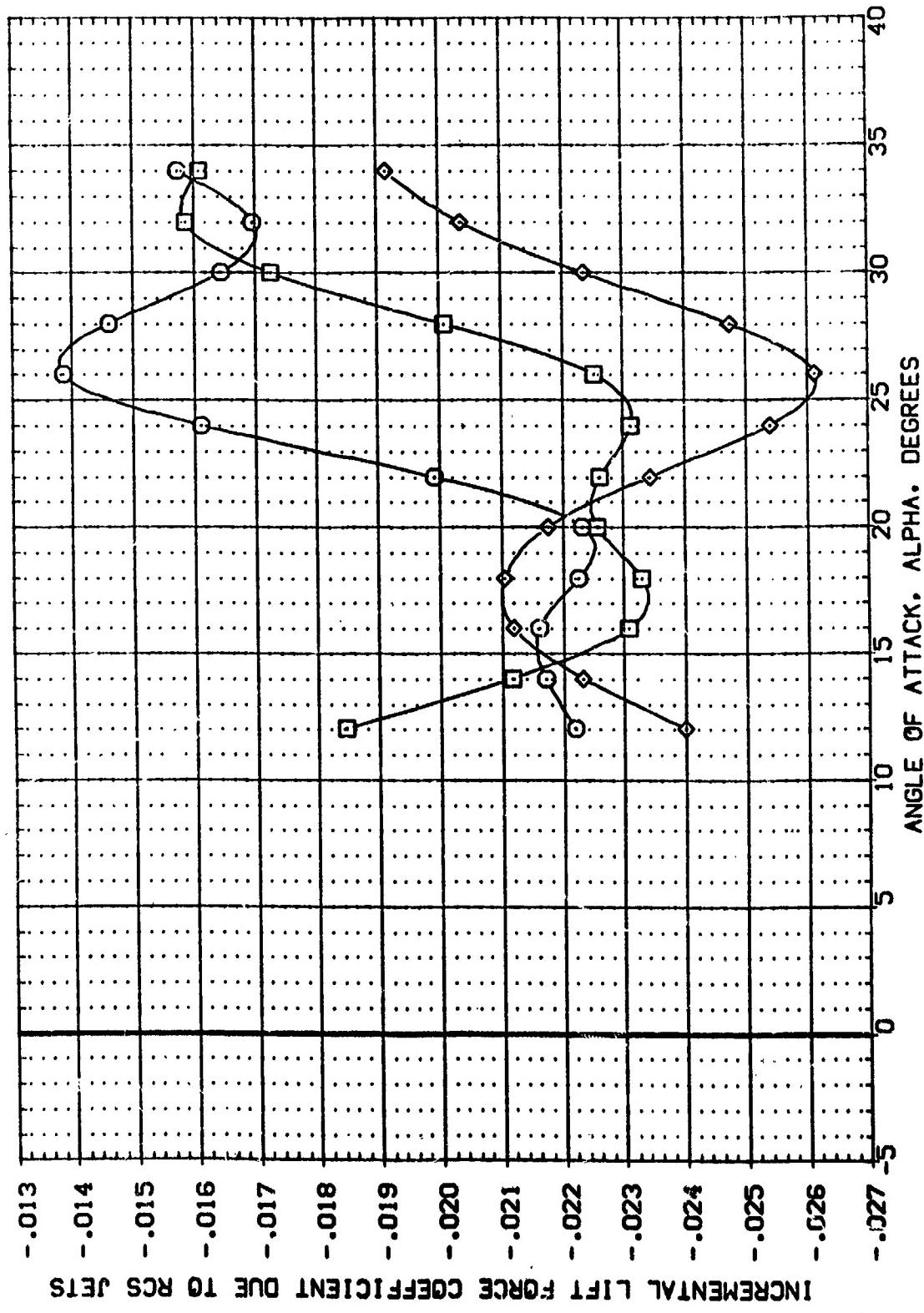
( $\Delta$ MACH = 4.00)

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REFERENCE INFORMATION

SPEF	7.245	SQ. FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XREF	12.9510	INCHES
YREF	.0000	INCHES
ZREF	.6150	INCHES

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APM050) MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF : BVTN4  
 (APM051) MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF : BVTN4  
 (APM052) MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF : BVTN4

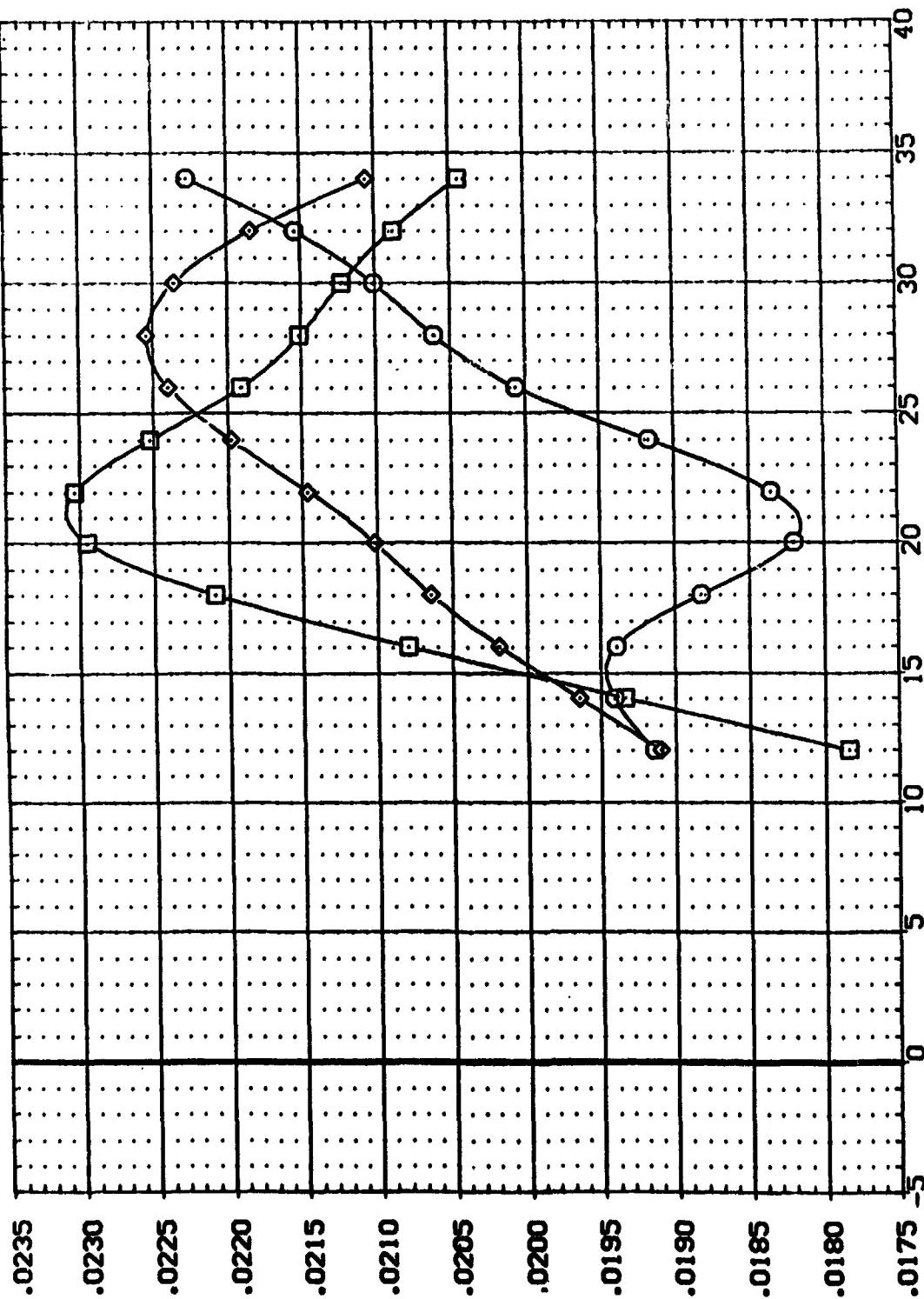


ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECTIVENESS IN SIDESLIP  
 (V/MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(AP050)	MA-7, UPNT	1031, ROCKWELL	PRR	GRB.	CONF:	BMTN4
(AP051)	MA-7, UPNT	1031, ROCKWELL	PRR	GRB.	CONF:	BMTN4
(AP052)	MA-7, UPNT	1031, ROCKWELL	PRR	GRB.	CONF:	BMTN4

REFERENCE INFORMATION  
 SREF .7245 SO.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF .0030 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150



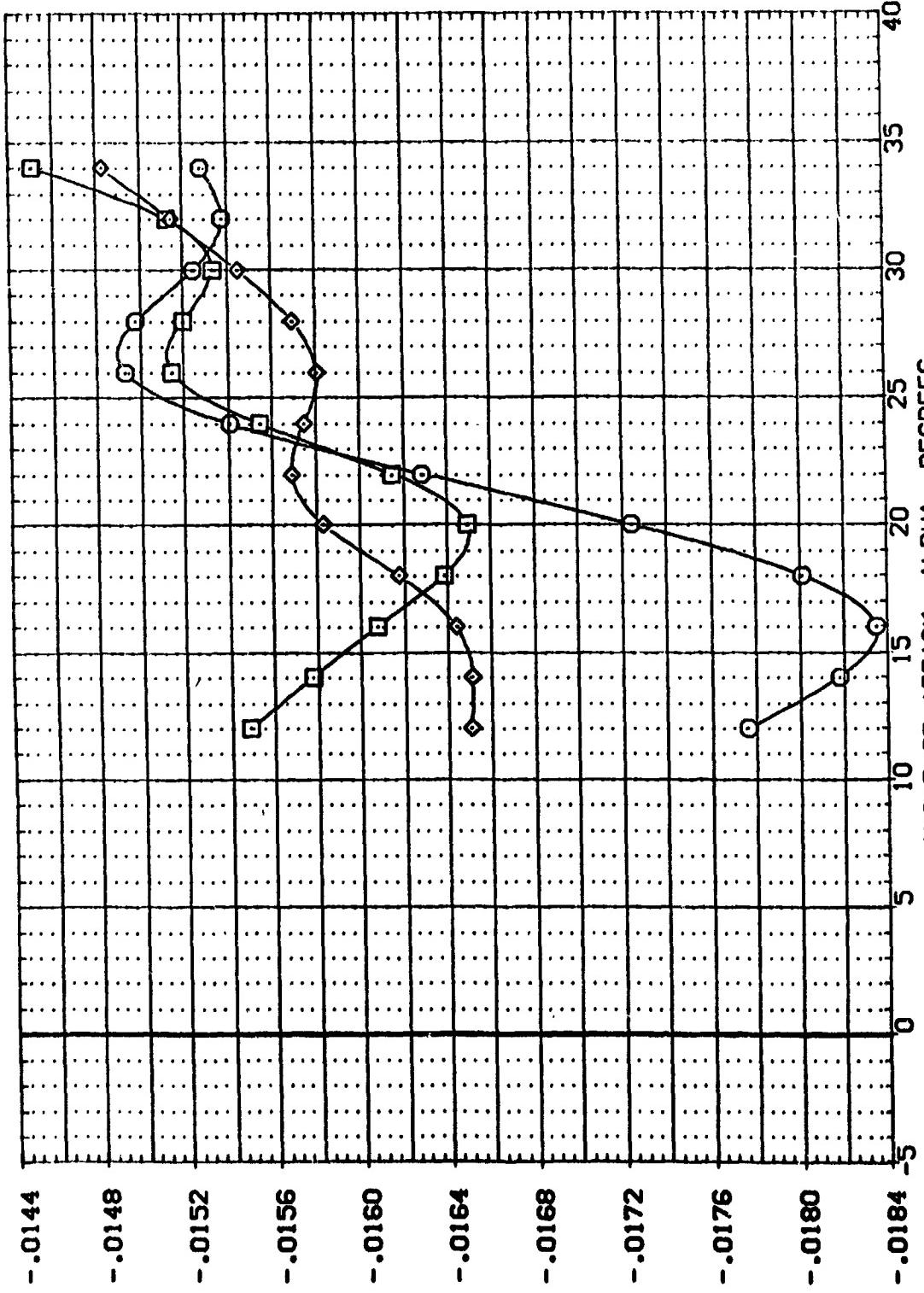
INCREMENTAL PITCHING MOMENT COEFFICIENT DUE TO RCS JETS

ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECTIVENESS IN SIDESLIP  
 $(\text{MACH}) = 4.00$

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APMOS1) C MA-7, UPNT 1031, ROCKWELL PRR GRB, CONF:  
 (APMOS2) O MA-7, UPNT 1031, ROCKWELL PRR GRB, CONF:  
 (APMOS2) X MA-7, UPNT 1031, ROCKWELL PRR GRB, CONF:

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 1.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF .0000 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150



INCREMENTAL AXIAL FORCE COEFFICIENT DUE TO RCS JETS

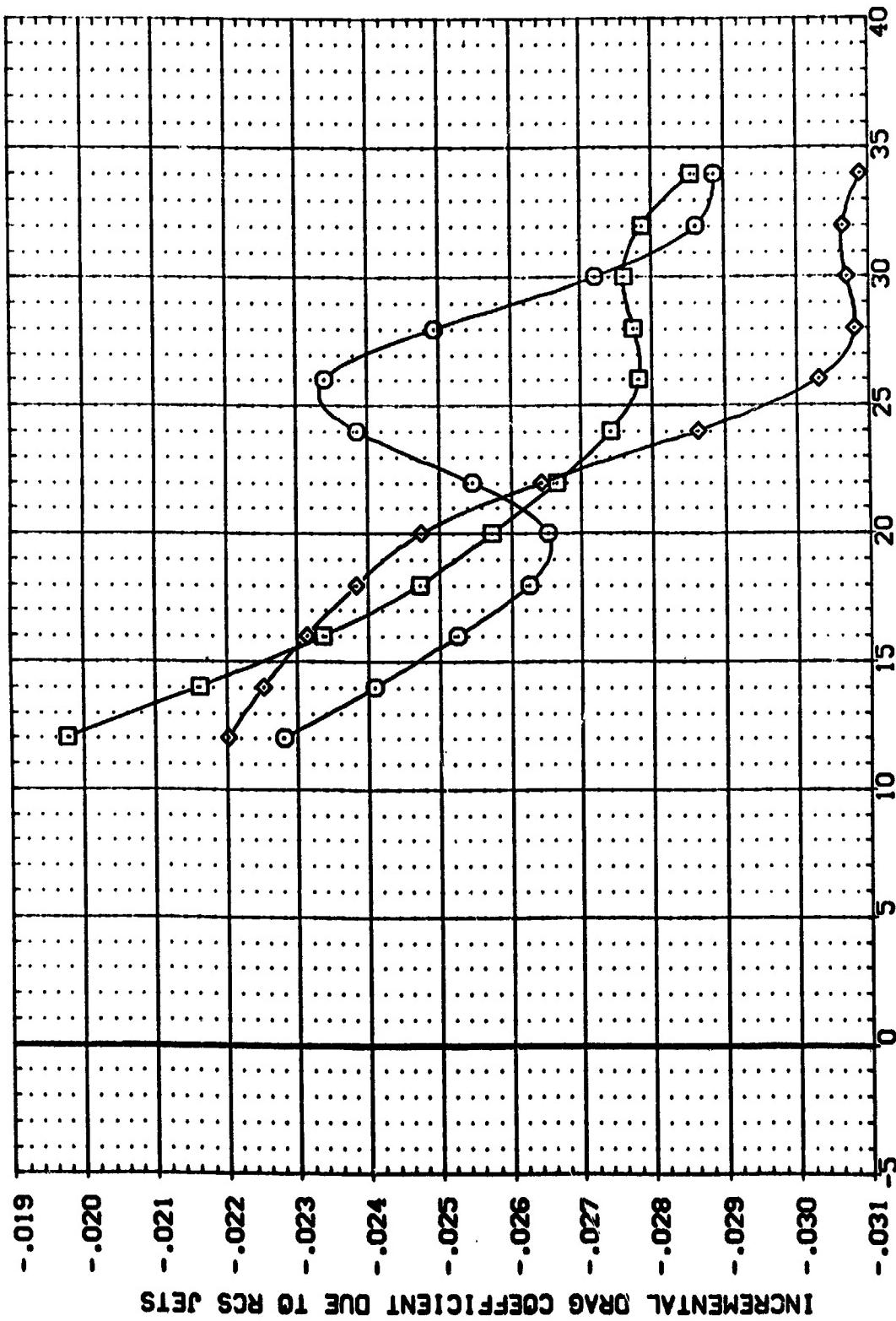
ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECTIVENESS IN SIDESLIP

(A)MACH = 4.00

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DATA SET STREAM	CONFIGURATION DESCRIPTION
( APDOS1 )	MA-7, UPNT 1031, RCKNELL PER
( APDOS1 )	MA-7, UPNT 1031, RCKNELL PER
( APDOS2 )	MA-7, UPNT 1031, RCKNELL PER

		REFERENCE INFORMATION	
BETA	RNL	SREF	SO.FT.
.000	328.000	1.000	7.8828
-2.500	328.000	1.000	15.1152
-5.000	328.000	1.000	12.9510
		YRP	0.0000
		ZRP	6.00150
		SCRF	

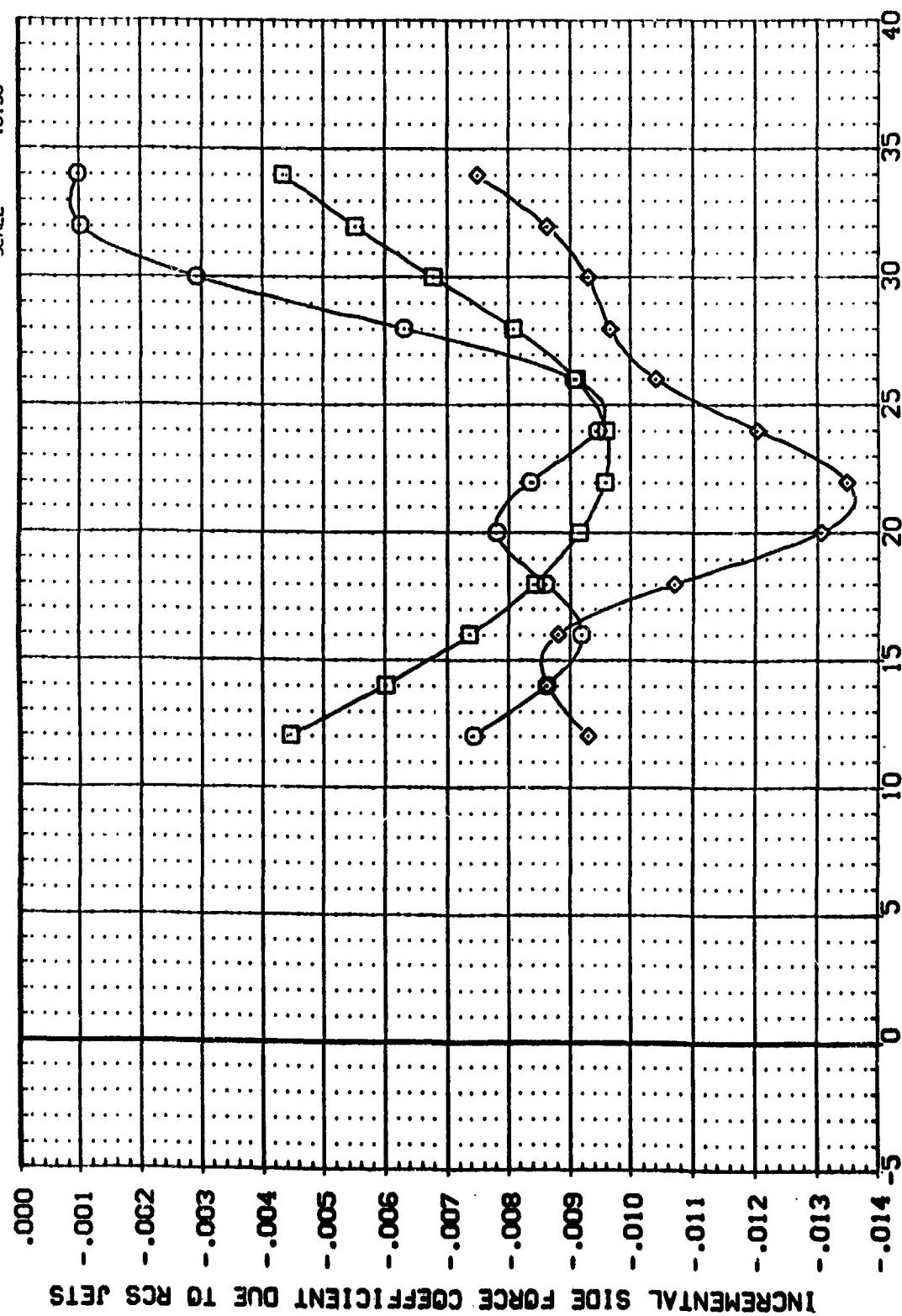


ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECTIVENESS IN SIDESLIP

(A)MACH = 4.00

DATA: JET SMBOL. CONFIGURATION DESCRIPTION  
 (APROS0) MA-7, UPNT 1031, ROCKWELL PRR DRG. CONF.: BYTN4  
 (APROS1) MA-7, UPNT 1031, ROCKWELL PRR DRG. CONF.: BYTN4  
 (APROS2) MA-7, UPNT 1031, ROCKWELL PRR DRG. CONF.: BYTN4

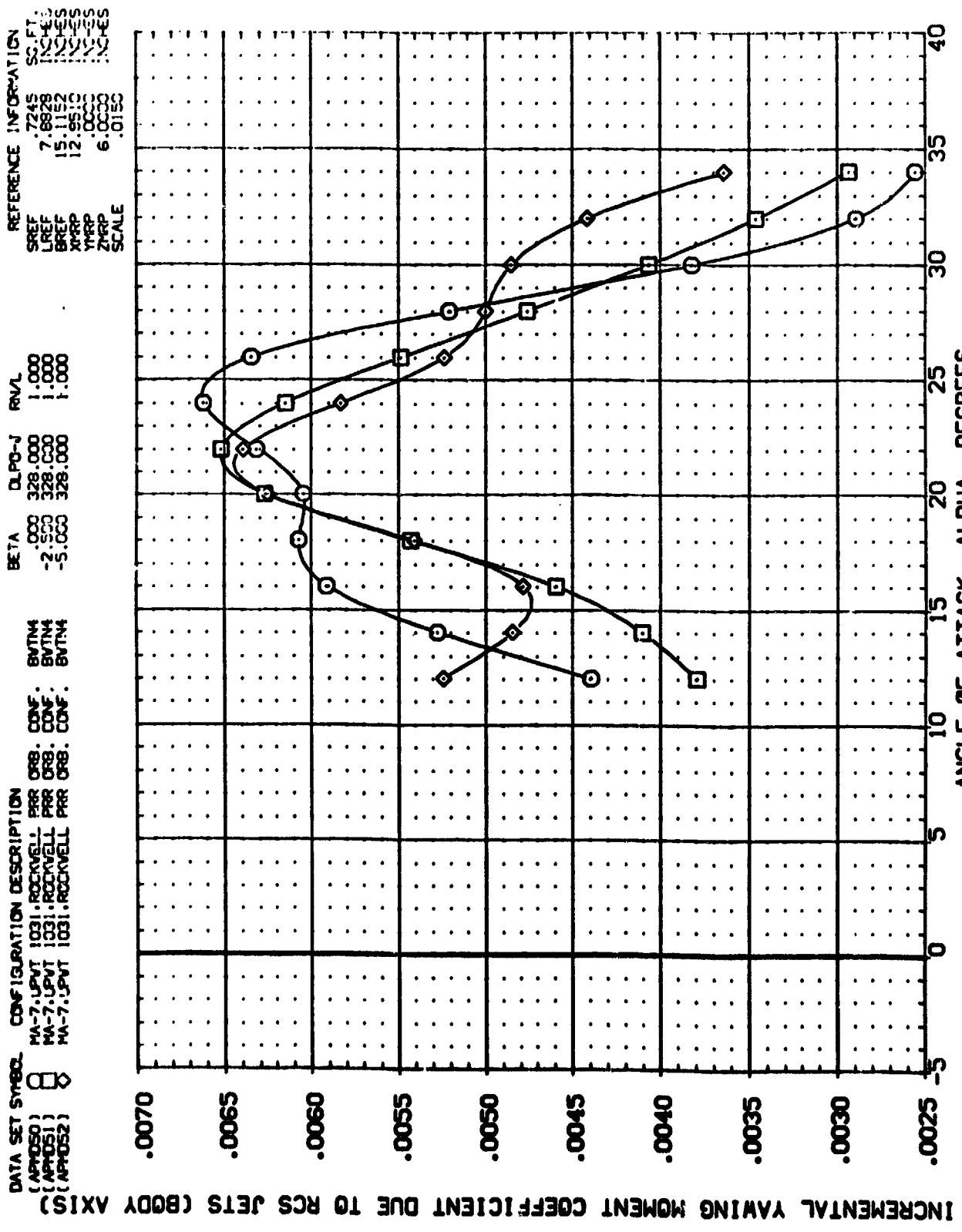
REFERENCE INFORMATION  
 SREF .7245 SO.FT.  
 LREF 7.8628 INCHES  
 BREF 15.1152 INCHES  
 XFRP 12.9510 INCHES  
 YFRP 0.0000 INCHES  
 ZFRP 6.0000 INCHES  
 SCALE .0150



INCREMENTAL SIDE FORCE COEFFICIENT DUE TO RCS JETS

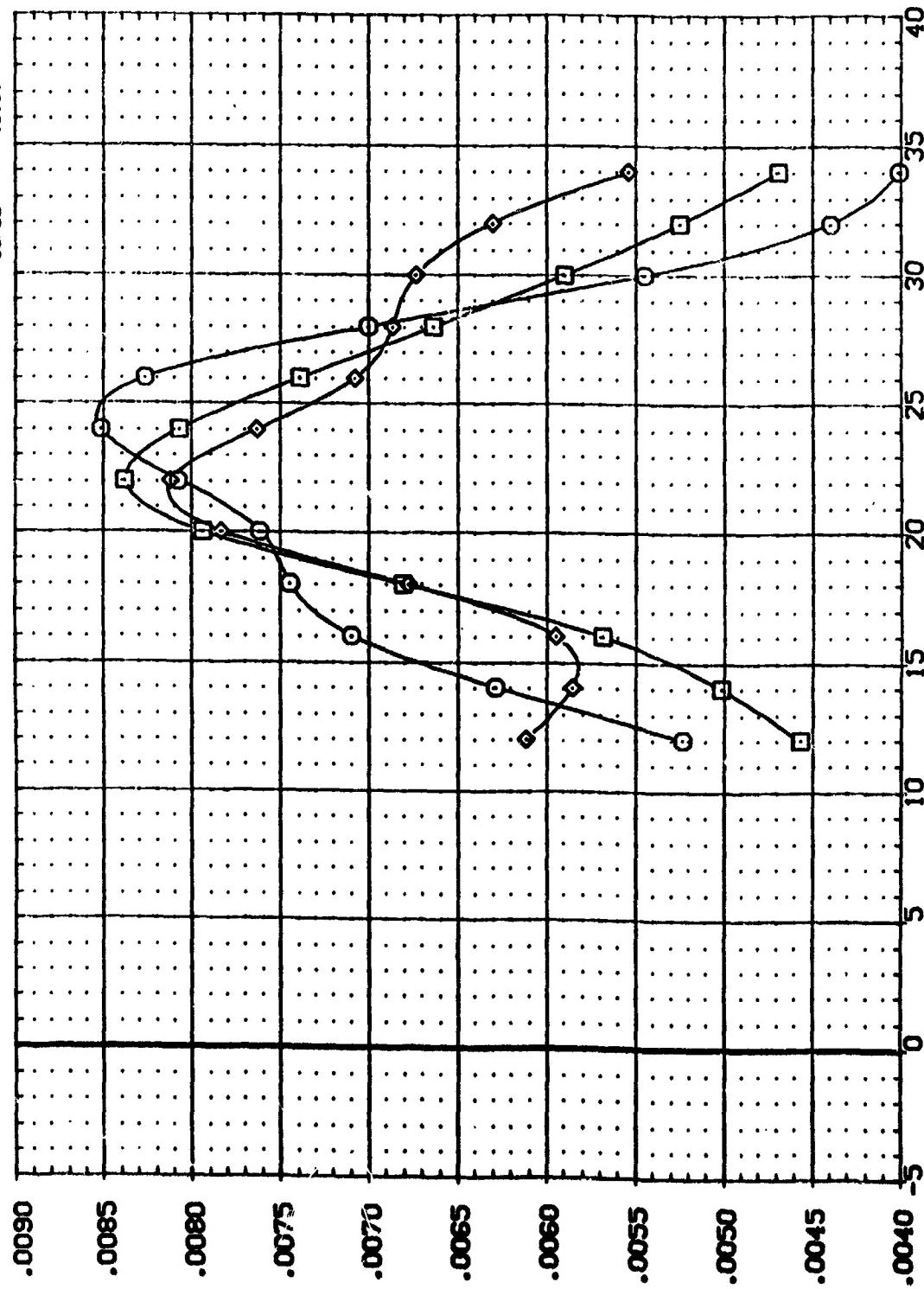
ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECTIVENESS IN SIDESLIP  
 $(\Delta MACH = 4.00)$

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 LAM501 MA-7, UPN 103, ROCKWELL PR. GSB. CONF.: BM1NA  
 LAM51 MA-7, UPN 103, ROCKWELL PR. GSB. CONF.: BN1NA  
 LAM52 MA-7, UPN 103, ROCKWELL PR. GSB. CONF.: BV1NA

REFERENCE INFORMATION  
 SREF 7245 SD FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 X\*RP 12.9510 INCHES  
 Y\*RP .0000 INCHES  
 Z\*RP 6.0000 INCHES  
 SCALE .0150

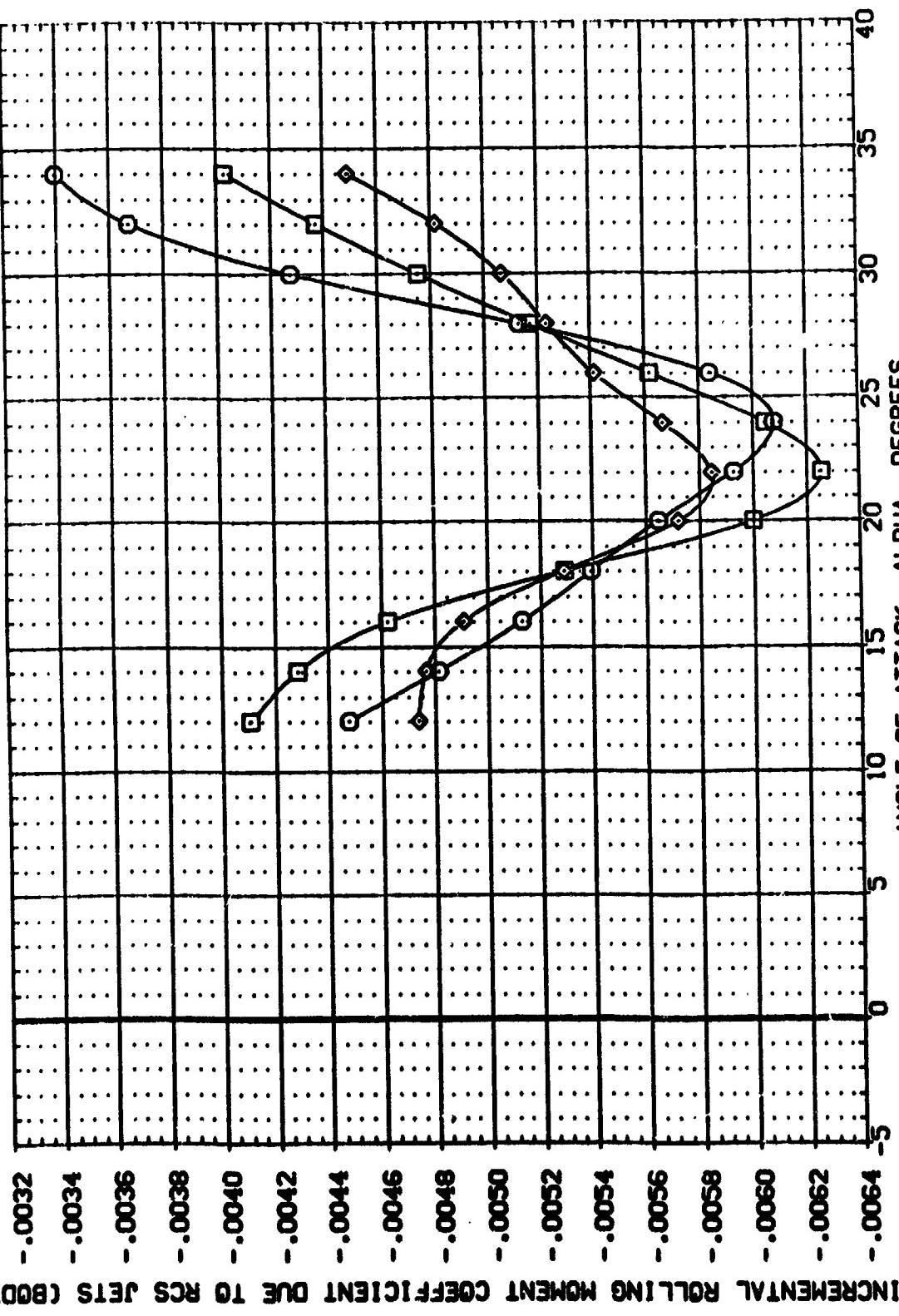


INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (STABILITY AXIS)

ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECTIVENESS IN SIDESLIP  
 C/MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 AERO50 MA-7, UPN 1031, REEVELL PRB, CONF: BVTM4  
 AERO51 MA-7, UPN 1031, REEVELL PRB, CONF: BVTM4  
 AERO52 MA-7, UPN 1031, REEVELL PRB, CONF: BVTM4

REFERENCE INFORMATION  
 SREF .7245 SQ. FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XTRP 12.9510 INCHES  
 YTRP .0000 INCHES  
 ZTRP 6.0000 INCHES  
 SCALE .0150



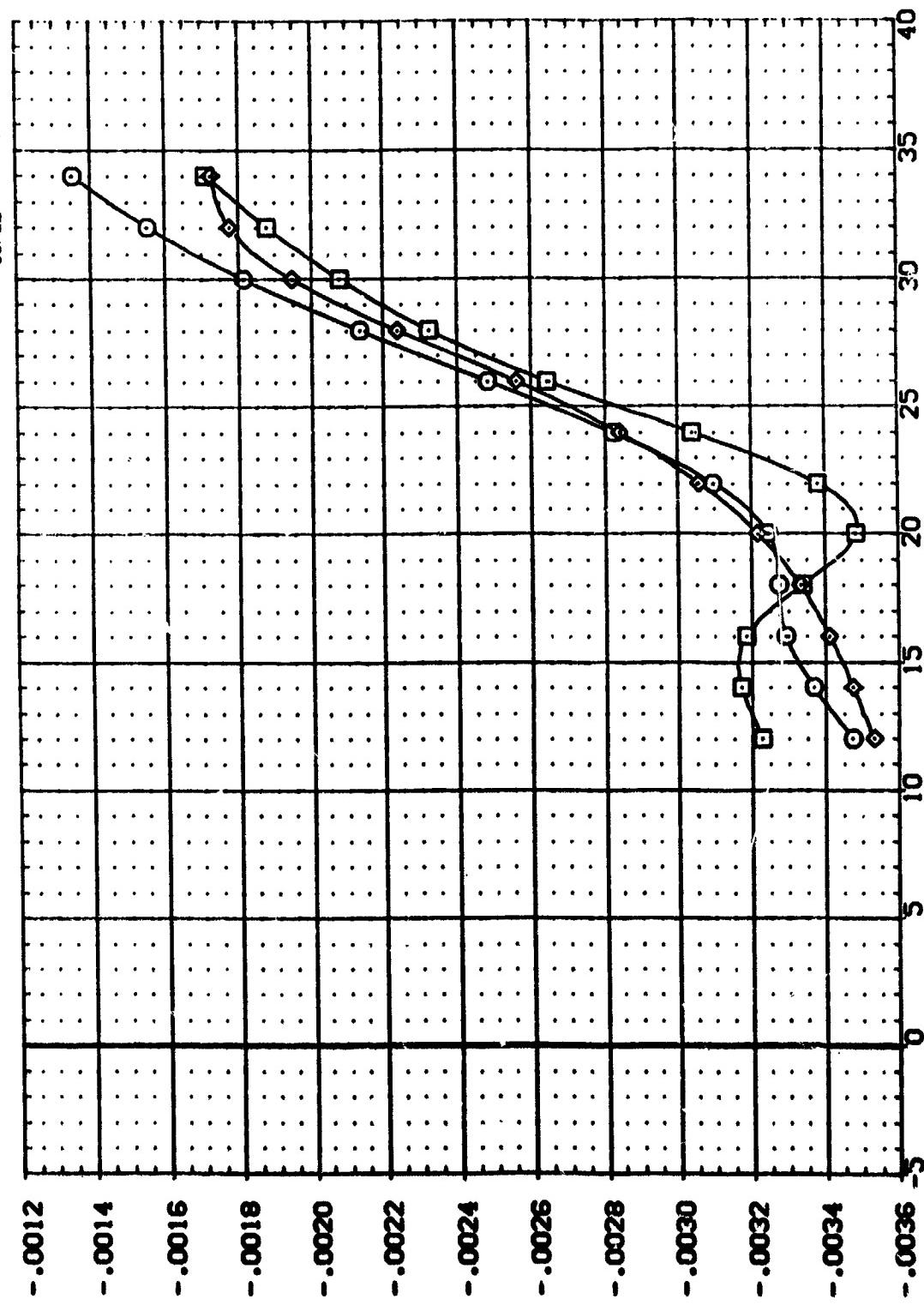
ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECTIVENESS IN SIDESLIP

C<sub>A</sub>MACH = 4.00

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DATA SET STRB. CONFIGURATION DESCRIPTION  
 (APROS0) MA-7-LSPN 1031-RCMELL PRR 098. CONF. BMTN4  
 (APROS1) MA-7-LSPN 1031-RCMELL PRR 098. CONF. BMTN4  
 (APROS2) MA-7-LSPN 1031-RCMELL PRR 098. CONF. BMTN4  
 (APROS3) MA-7-LSPN 1031-RCMELL PRR 098. CONF. BMTN4  
 (APROS4) MA-7-LSPN 1031-RCMELL PRR 098. CONF. BMTN4  
 (APROS5) MA-7-LSPN 1031-RCMELL PRR 098. CONF. BMTN4

REFERENCE INFORMATION  
 SC.FT.  
 SREF 7.7245  
 LREF 7.8828  
 BREF 15.1152  
 XREF 12.9510  
 YREF 6.0000  
 ZREF .0150  
 SCALE



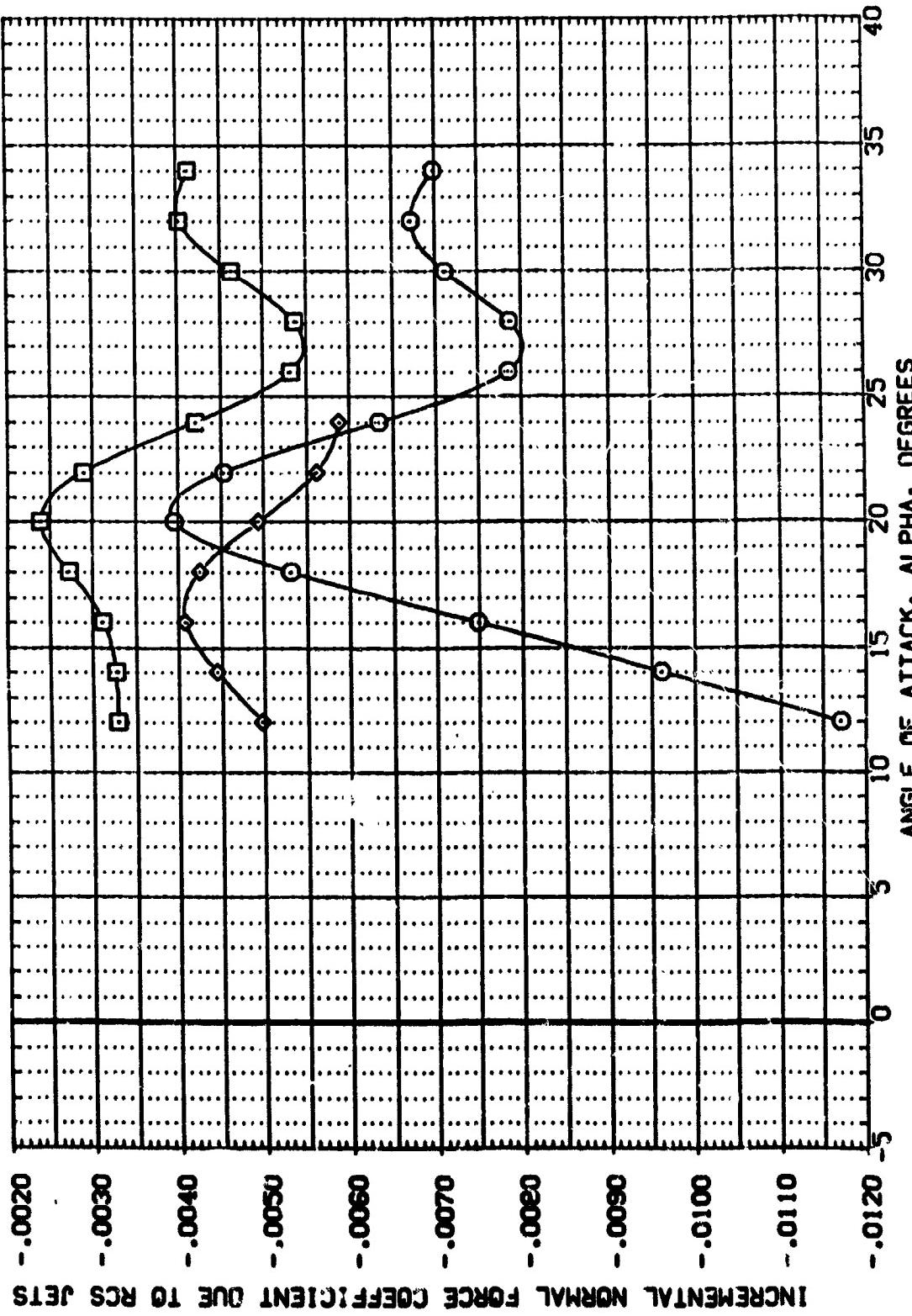
INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS STABILITY AXIS

ROLL JET INTERFERENCE (INCREMENTAL DATA). EFFECTIVENESS IN SIDESLIP  
MACH = 4.00

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DATA SET NAME: CONFIGURATION DESCRIPTION  
 APP051: 1031: ROCKWELL PAR: CONF: BNTM  
 APP052: 1031: UPVT PAR: CONF: BNTM  
 APP053: 1031: ROCKWELL PAR: CONF: BNTM  
 APP054: 1031: ROCKWELL PAR: CONF: BNTM

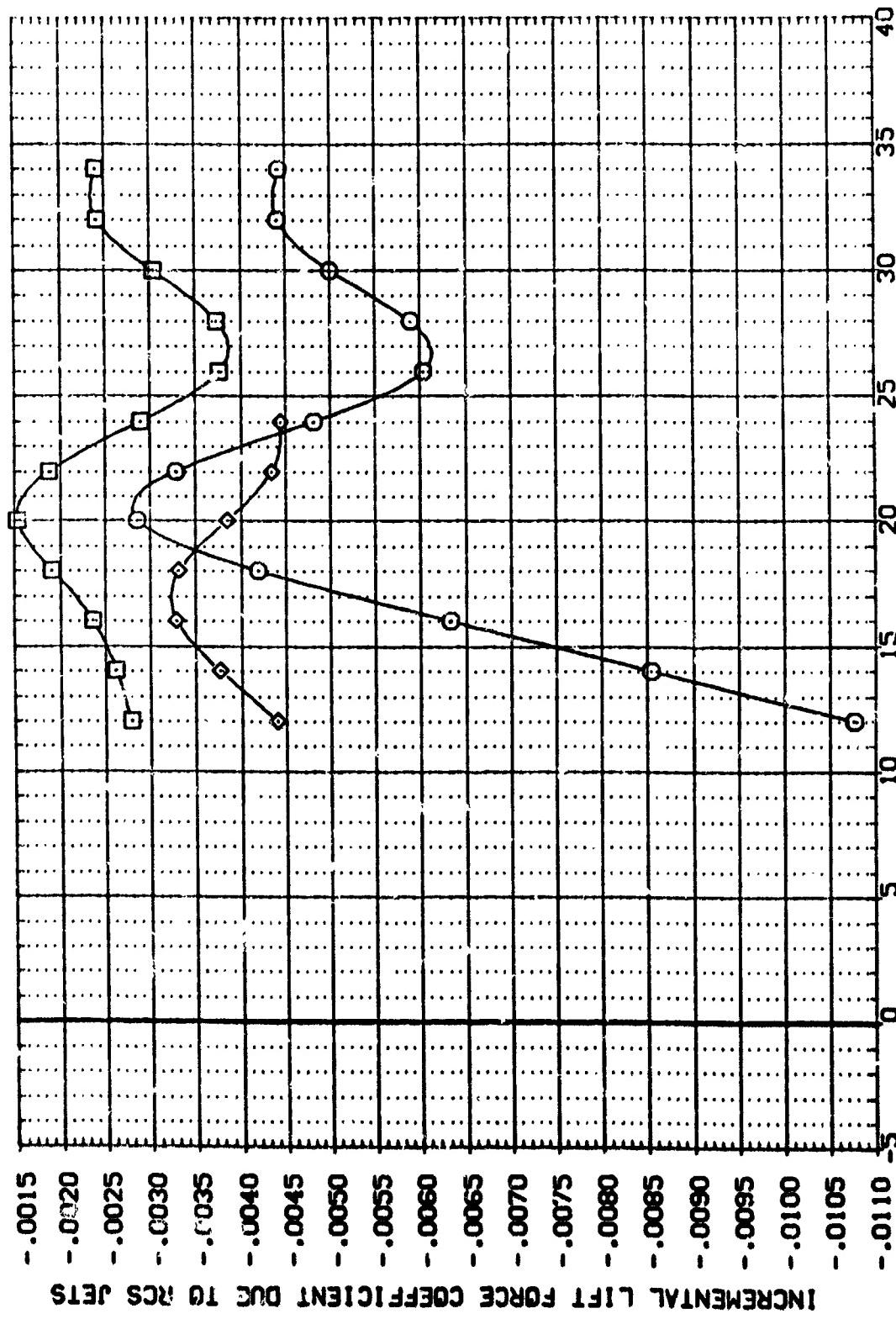
REFERENCE INFORMATION  
 SPF: 7245 SQ.FT.  
 LSF: 7.8828 INCHES  
 GSF: 15.1152 INCHES  
 XCS: 12.9510 INCHES  
 YCS: 6.0000 INCHES  
 ZCS: .0150 INCHES  
 SCALE:



INCREMENTAL NORMAL FORCE COEFFICIENT DUE TO RCS JETS  
 .ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER (PJ/PINF=4.5)  
 CAIMACH = 4.00  
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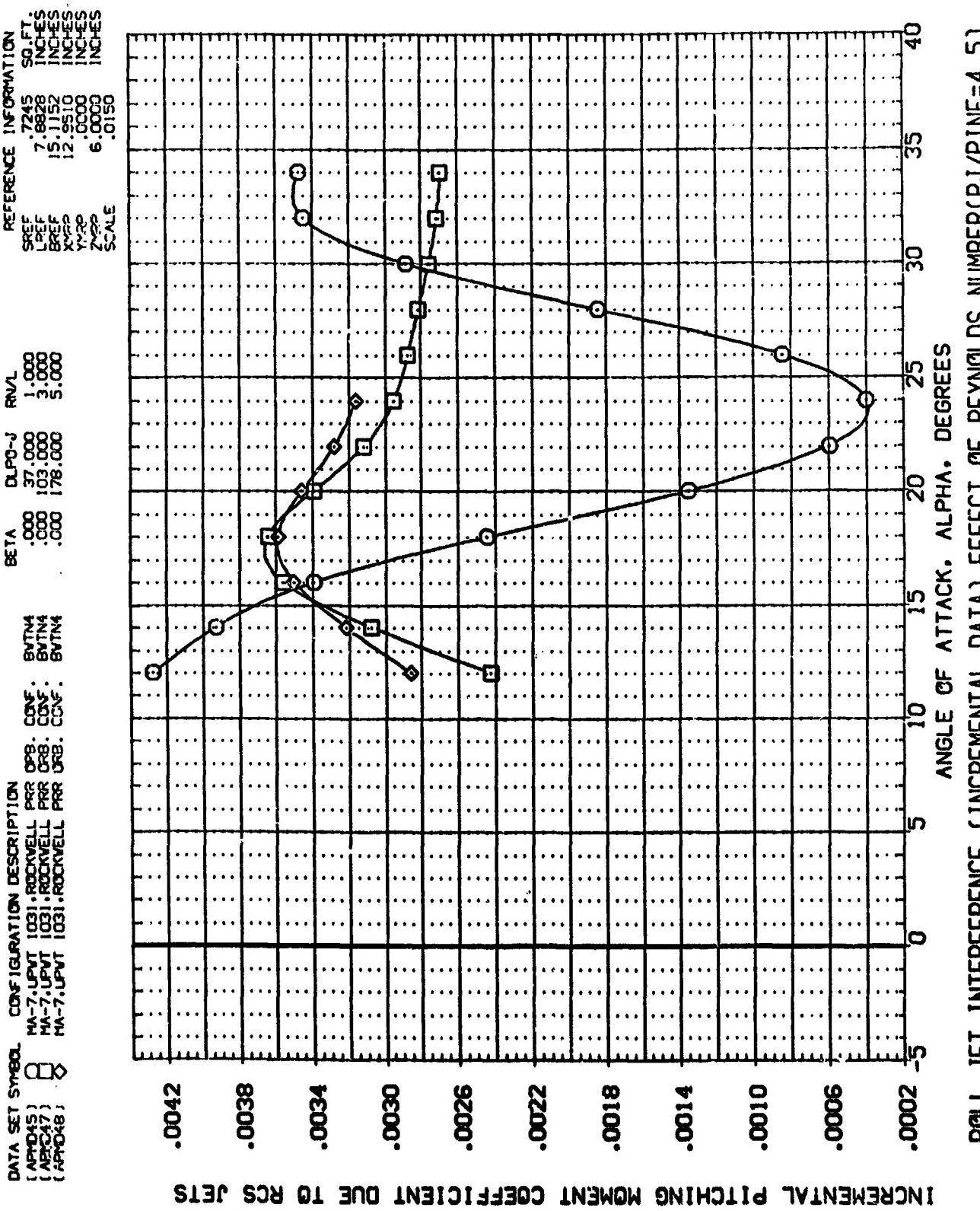
DATA SET STREAM. CONFIGURATION DESCRIPTION  
 APP005 MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF.:  
 APP007 MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF.:  
 APP008 MA-7, JPWT 1031, ROCKWELL PRR ORB. CONF.:

REFERENCE INFORMATION  
 SREF 7245 SQ.F.  
 LREF 7.8828 VES  
 BREF 15.1152 VES  
 XLRP 12.9610 VES  
 YLRP 6.0000 VES  
 ZLRP 6.0155 VES  
 SCALE



INCREMENTAL LIFT FORCE COEFFICIENT DUE TO RCS JETS  
 - ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER(PJ/PINF=4.5)  
 (A)MACH = 4.00

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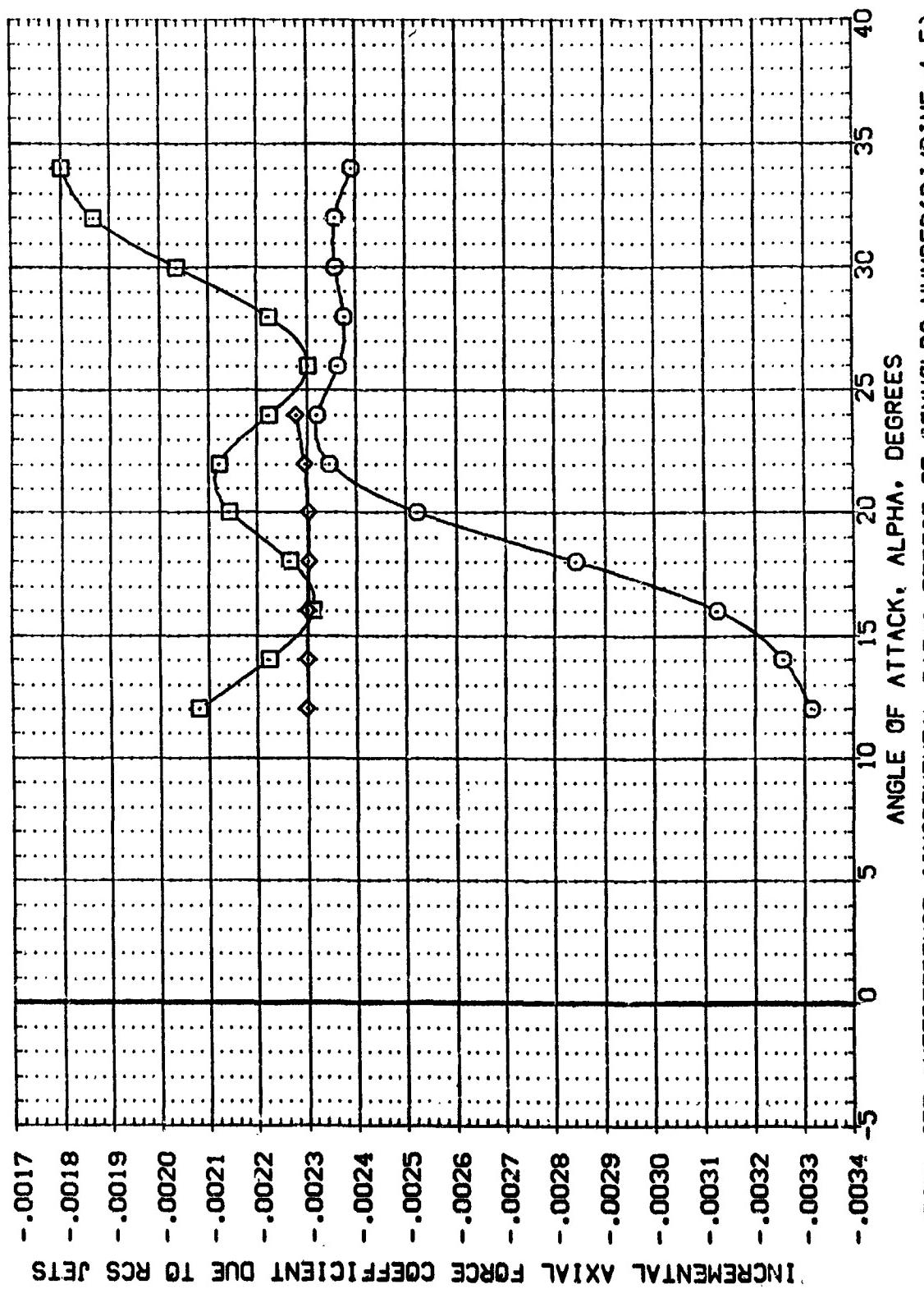
ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER (Pj/Pinf=4.5)

( $\Delta$ MACH = 4.00)

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APD05) MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.  
 (APD07) MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.  
 (APD08) MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.

REFERENCE INFORMATION  
 SREF 7245 SC. FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150



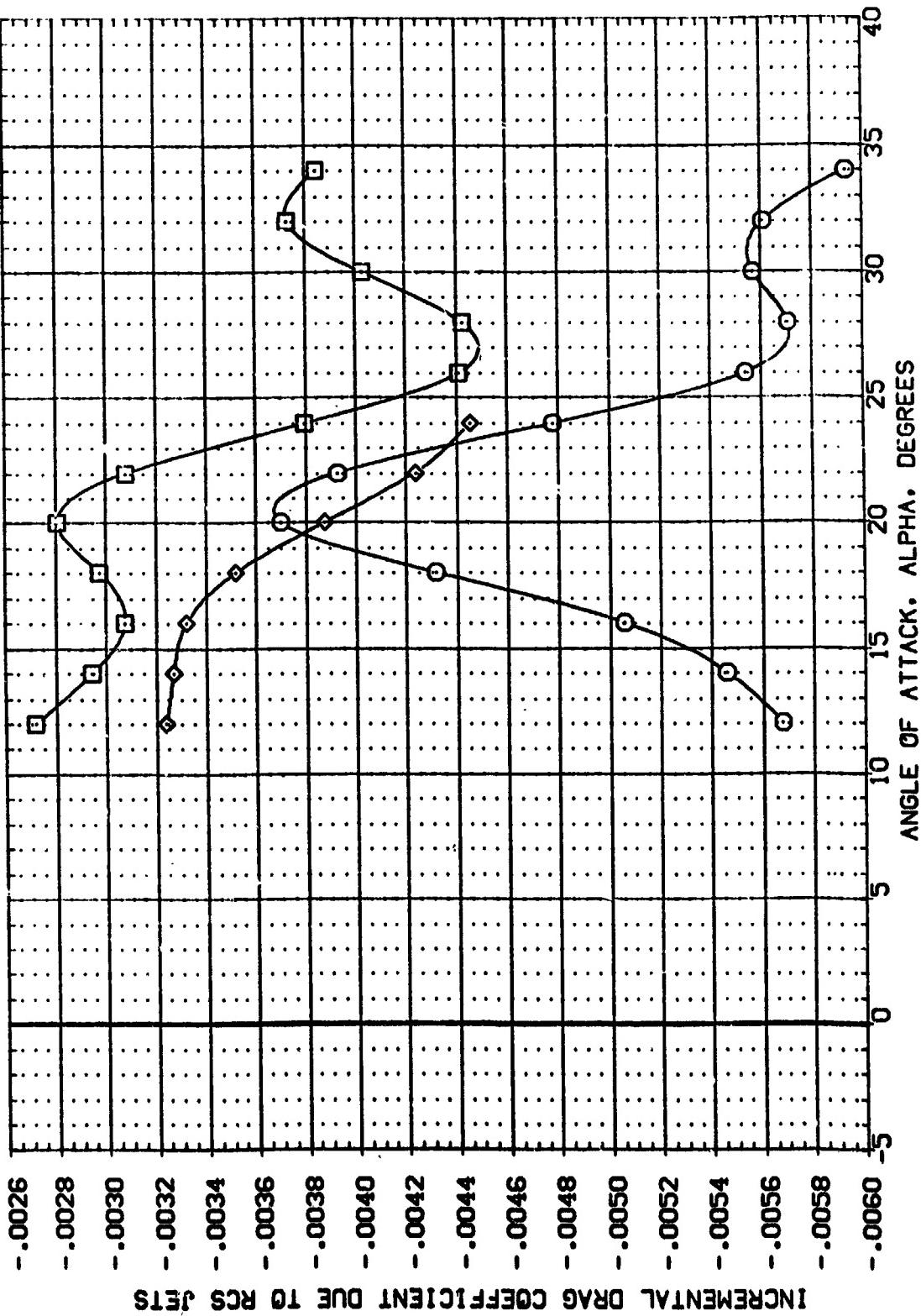
ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER ( $P_J/P_{INF}=4.5$ )

( $\Delta MACH$ ) = 4.00

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APR045) MA-7.USVT 1031, ROCKWELL PRR CRB: CONF: BVTM4  
 (APR046) MA-7.USVT 1031, ROCKWELL PRR CRB: CONF: BVTM4  
 (APR048) MA-7.USVT 1031, ROCKWELL PRR -CRB: CONF: BVTM4

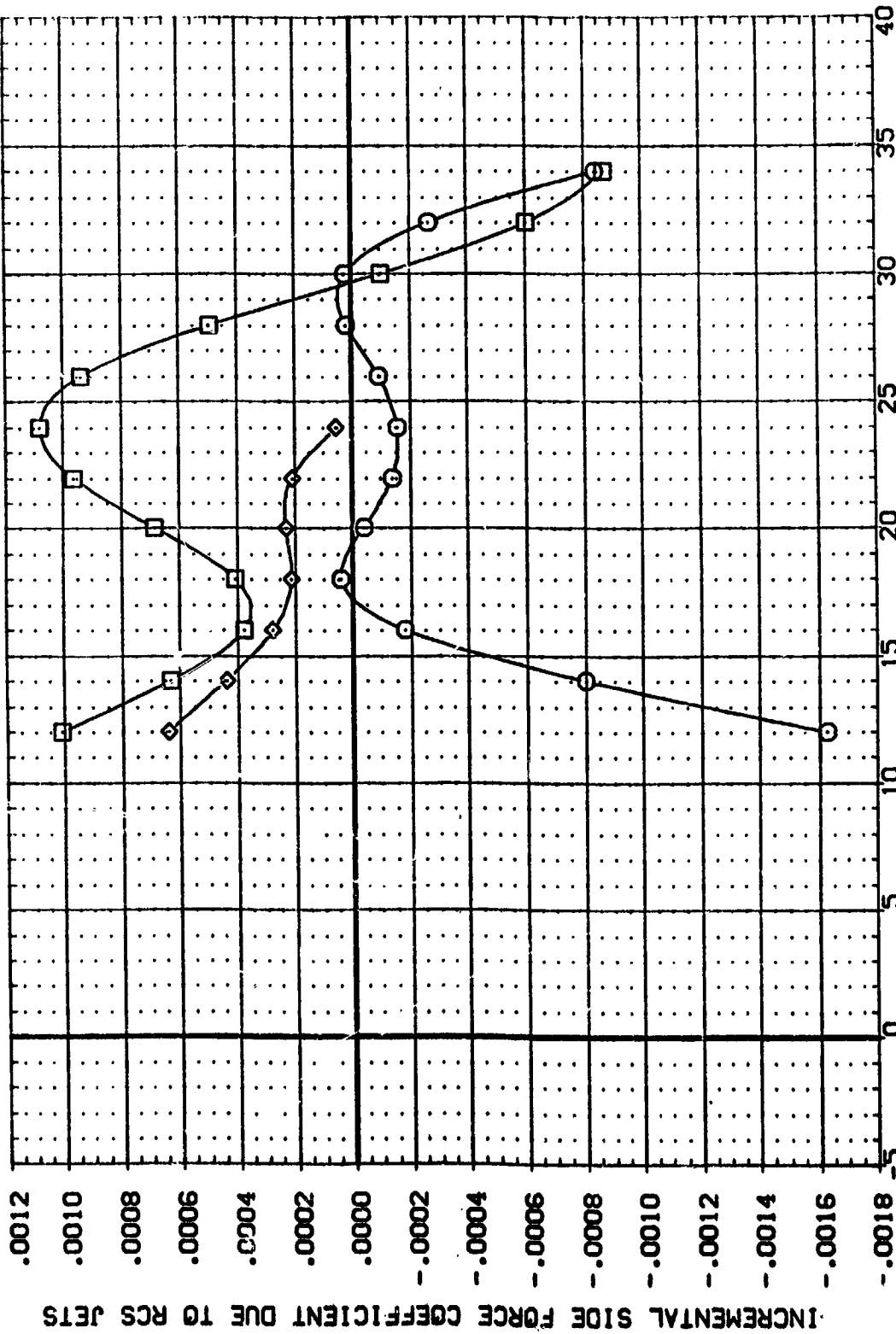
REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP .0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150



ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER ( $P_J/P_{INF} = 4.5$ )  
 (V<sub>MACH</sub> = 4.00)  
 ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET NAME: CONFIGURATION DESCRIPTION  
 (APM45) MA-7\_UPUT 1031. ROCKWELL PRR C93. CONF.:  
 (APM47) MA-7\_UPUT 1031. ROCKWELL PRR C98. CONF.:  
 (APM48) MA-7\_UPUT 1031. ROCKWELL PRR C98. CONF.:

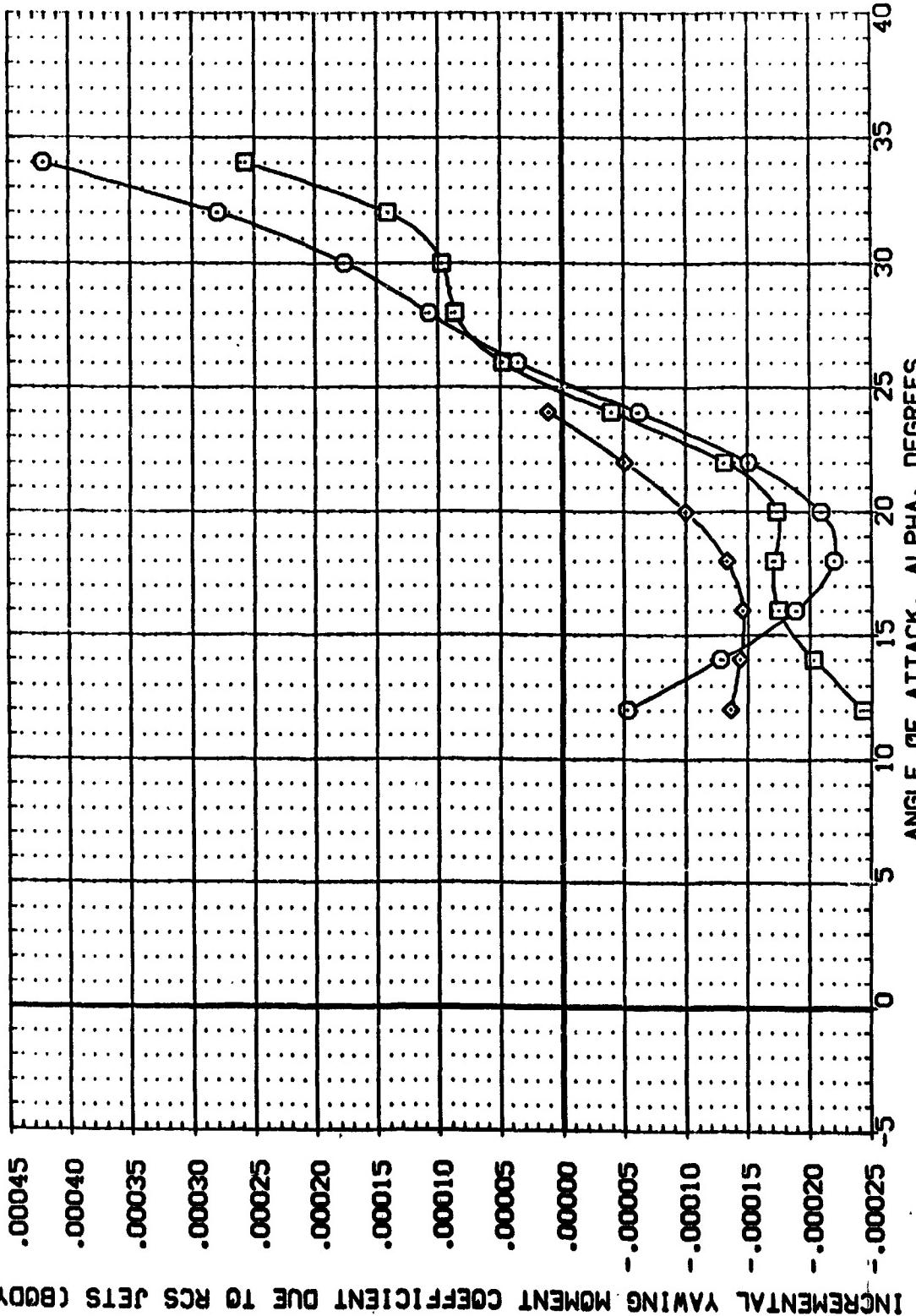
REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMPP 12.9510 INCHES  
 YMPP .0000 INCHES  
 ZMPP 6.0000 INCHES  
 SCALE .0150



ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER ( $P_J/P_{INF} = 4.5$ )  
 (A)MACH = 4.00  
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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (AP045) 8 MA-7. UPN 1031. ROCKWELL PR. CONF: BMTNA  
 (AP047) 8 MA-7. UPN 1031. ROCKWELL PR. CONF: BMTNA  
 (AP048) 8 MA-7. UPN 1031. ROCKWELL PR. CONF: BMTNA

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 5.1152 INCHES  
 XTRP 12.9510 INCHES  
 YTRP 6.0000 INCHES  
 ZTRP .0150 SCALE

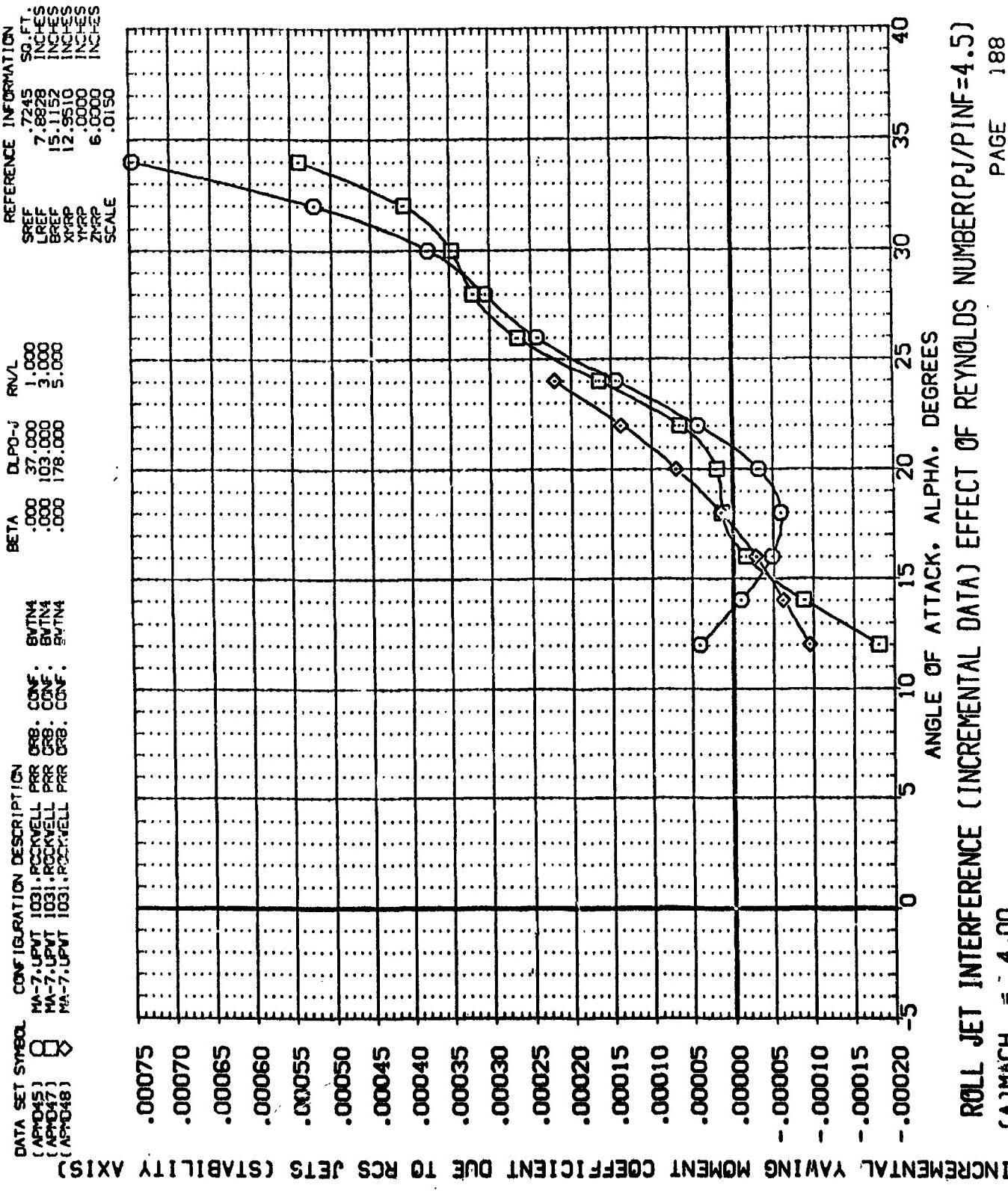


INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (BODY AXIS)

ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER( $P_J/P_{INF}=4.5$ )  
 (C<sub>MACH</sub> = 4.00)

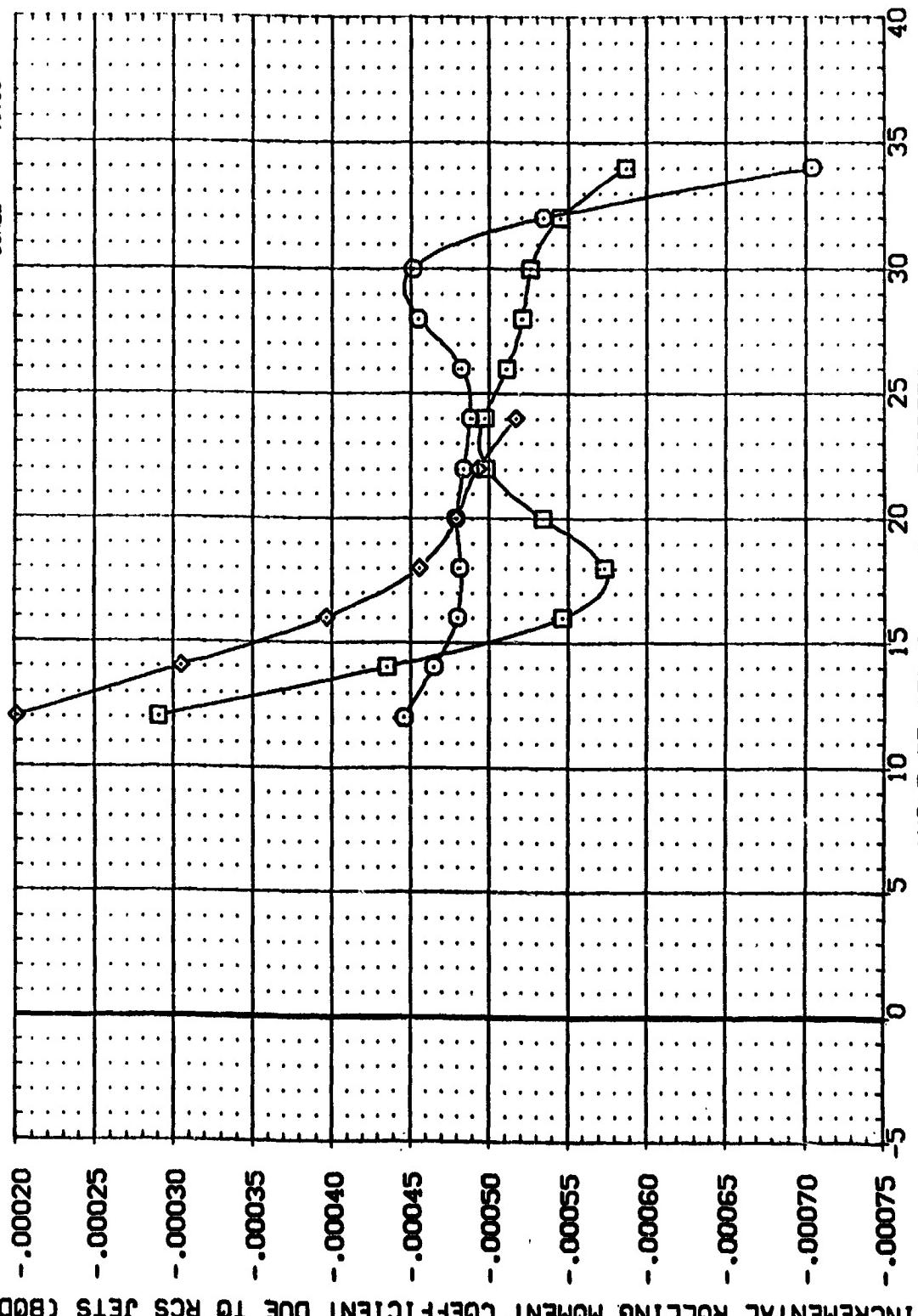
DATA SET *smea*  
 (APD045) MA-7, UPVT 1031, PCCNELL PRR ORB. CONF : BYTN4  
 (APD047) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF : BYTN4  
 (APD048) MA-7, UPVT 1031, PCCNELL PRR ORB. CONF : BYTN4

CONFIGURATION DESCRIPTION  
 DATA SET *smea*  
 (APD045) MA-7, UPVT 1031, PCCNELL PRR ORB. CONF : BYTN4  
 (APD047) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF : BYTN4  
 (APD048) MA-7, UPVT 1031, PCCNELL PRR ORB. CONF : BYTN4



DATA SET SIMBA. CONFIGURATION DESCRIPTION  
 C (APD045) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BMTN4  
 C (APD047) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BMTN4  
 C (APD048) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF: BMTN4

REFERENCE INFORMATION  
 SREF .7245 SC. FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0150 INCHES  
 SCALE

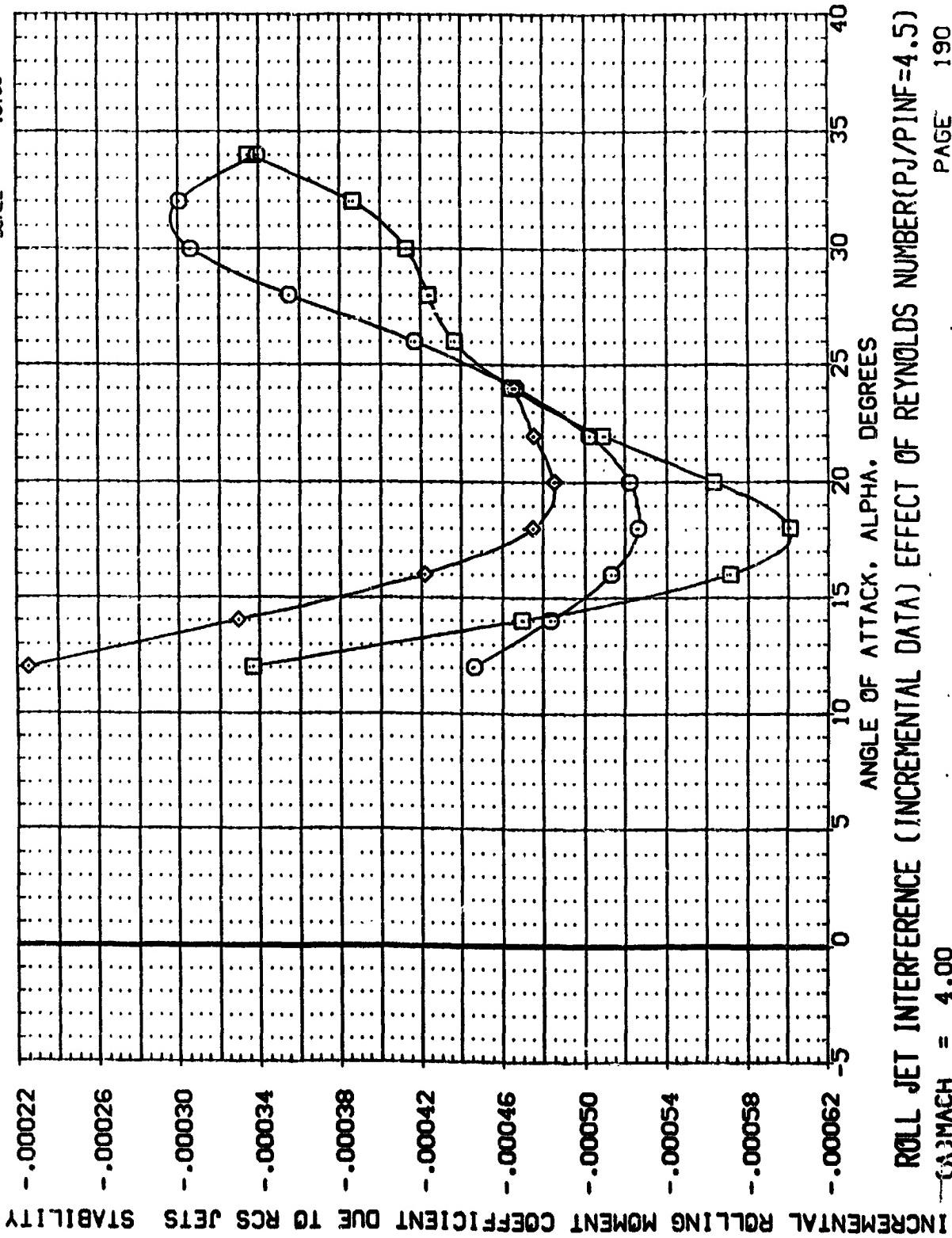


INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS (BODY AXIS)  
 ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER (Pj/Pinf = 4.5)

(A)MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APPD45) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF.: BVTN4  
 (APPD47) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF.: BVTN4  
 (APPD48) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF.: BVTN4

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.9828 INCHES  
 BREF 15.1152 INCHES  
 XTRP 12.9510 INCHES  
 YTRP 6.0000 INCHES  
 ZTRP .0150 INCHES  
 SCALE

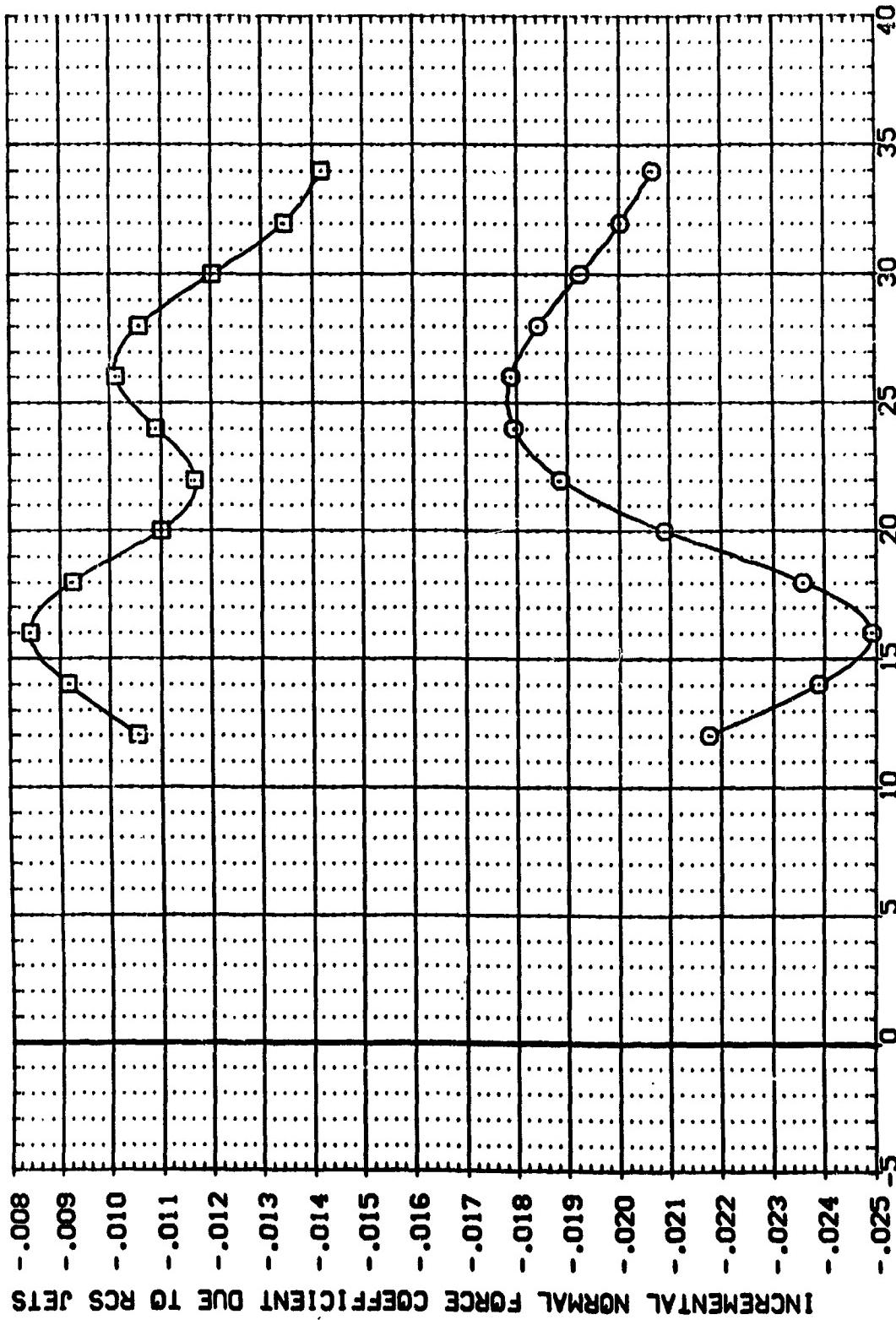


INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS STABILITY AXIS  
 ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER ( $P_j/P_{inf} = 4.5$ )  
 $c_{A3MACH} = 4.00$

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(APD9) □ MA-7, UPNT 1031, ROCKWELL PRB. CONF. BYTNM  
(APD3) □ MA-7, UPNT 1031, ROCKWELL PRB. CONF. BYTNM

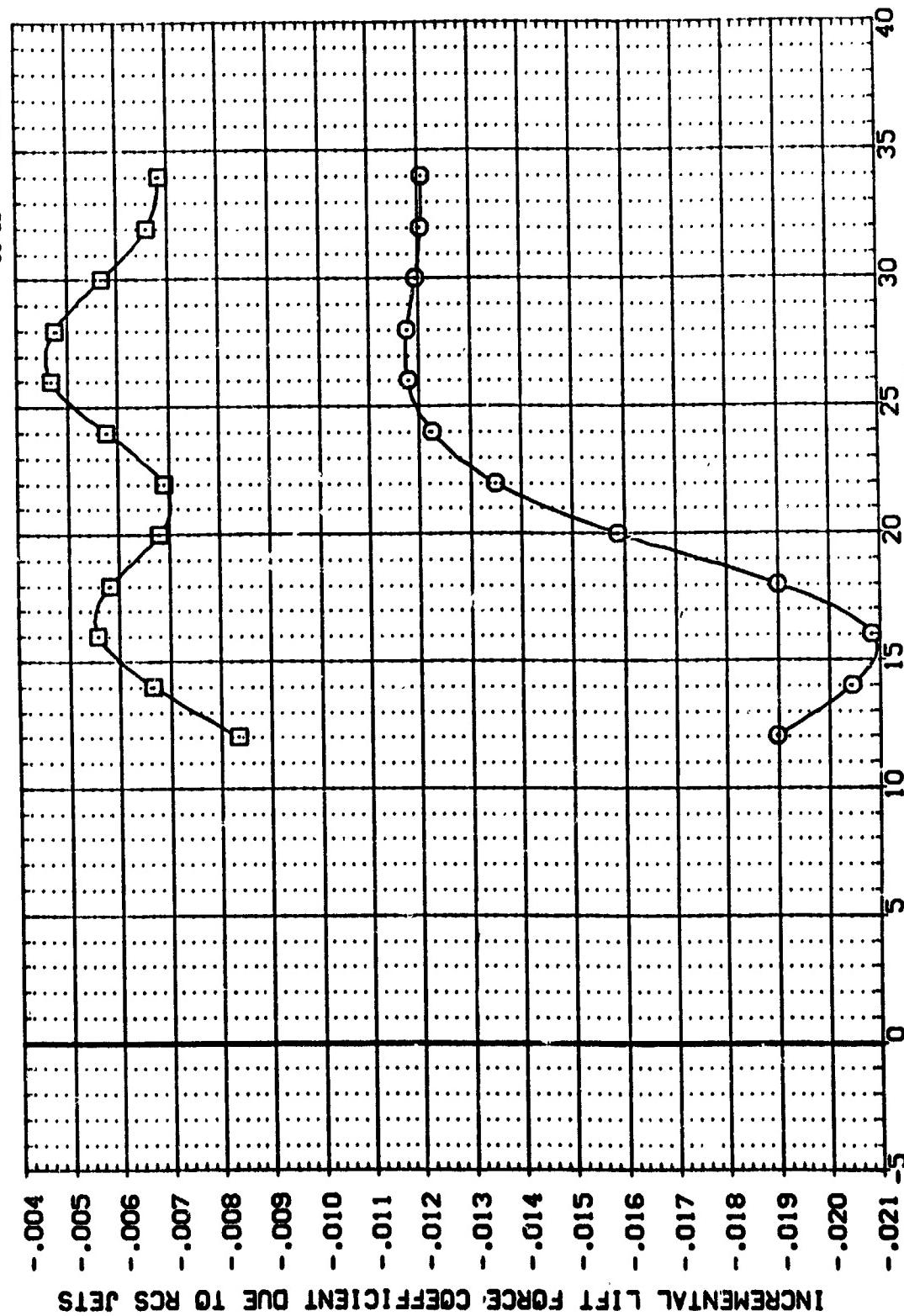
REFERENCE INFORMATION  
SREF .7245 SC.FT.  
LREF 7.8878 INCHES  
BREF 15.1152 INCHES  
XREF 12.9510 INCHES  
YREF 6.0000 INCHES  
ZREF .0510 INCHES  
SCALE .0510 INCHES



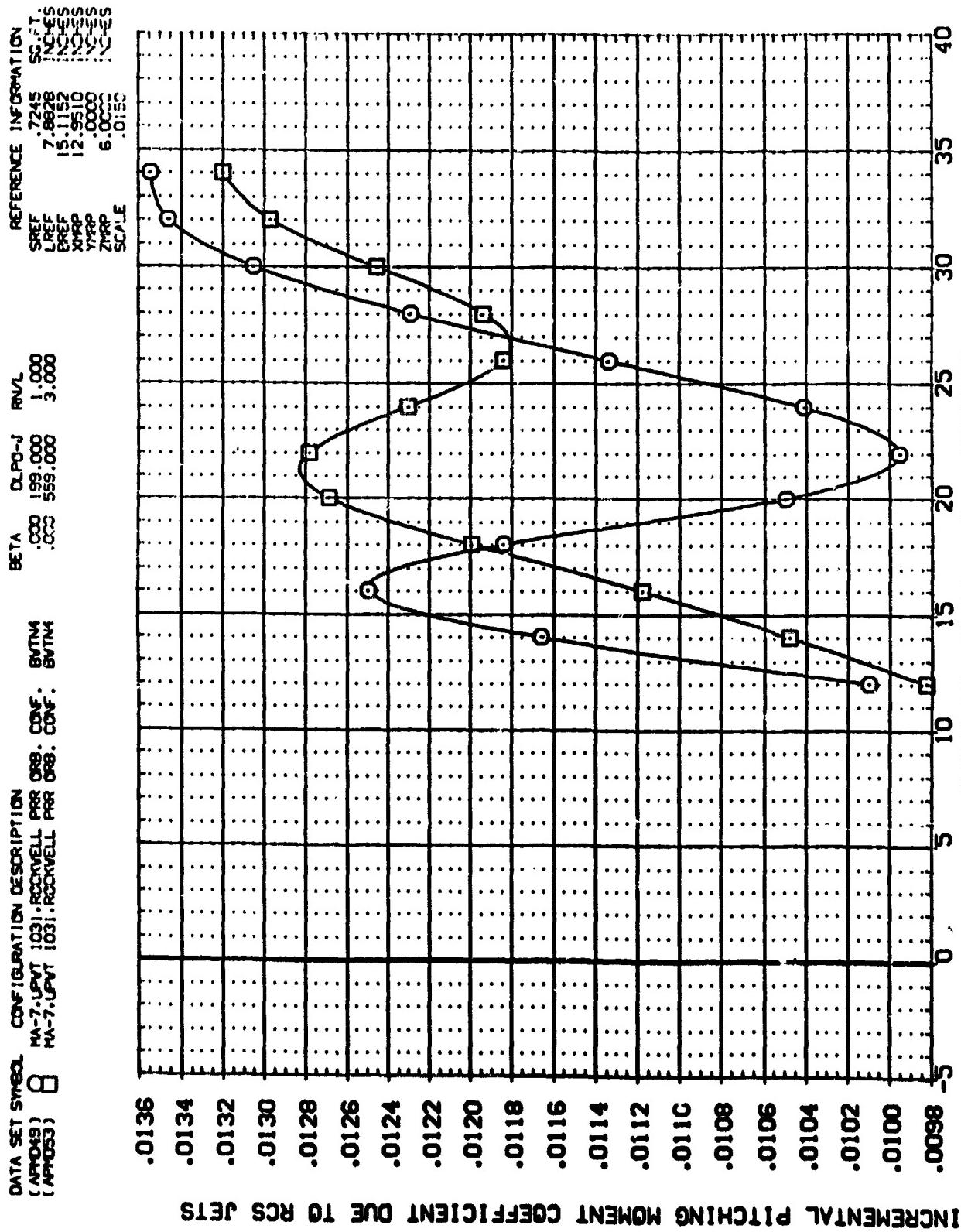
ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER (PJ/PINF=25)  
(V)MACH = 4.00  
PAGE 191

DATA SET NAME: CONFIGURATION DESCRIPTION  
AP049 1031:ROCKWELL PRR GRS. CONF.: GR11A  
AP053 1031:ROCKWELL PRR GRS. CONF.: GR11A

REFERENCE INFORMATION  
SREF .7245 SO FT.  
LREF 7.8828 INCHES  
BREF 15.1152 INCHES  
XREF 12.9510 INCHES  
YREF 0.0000 INCHES  
ZREF 6.0000 INCHES  
SCALE .0150



ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER (PJ/PINF=25)  
MACH = 4.00  
PAGE 192

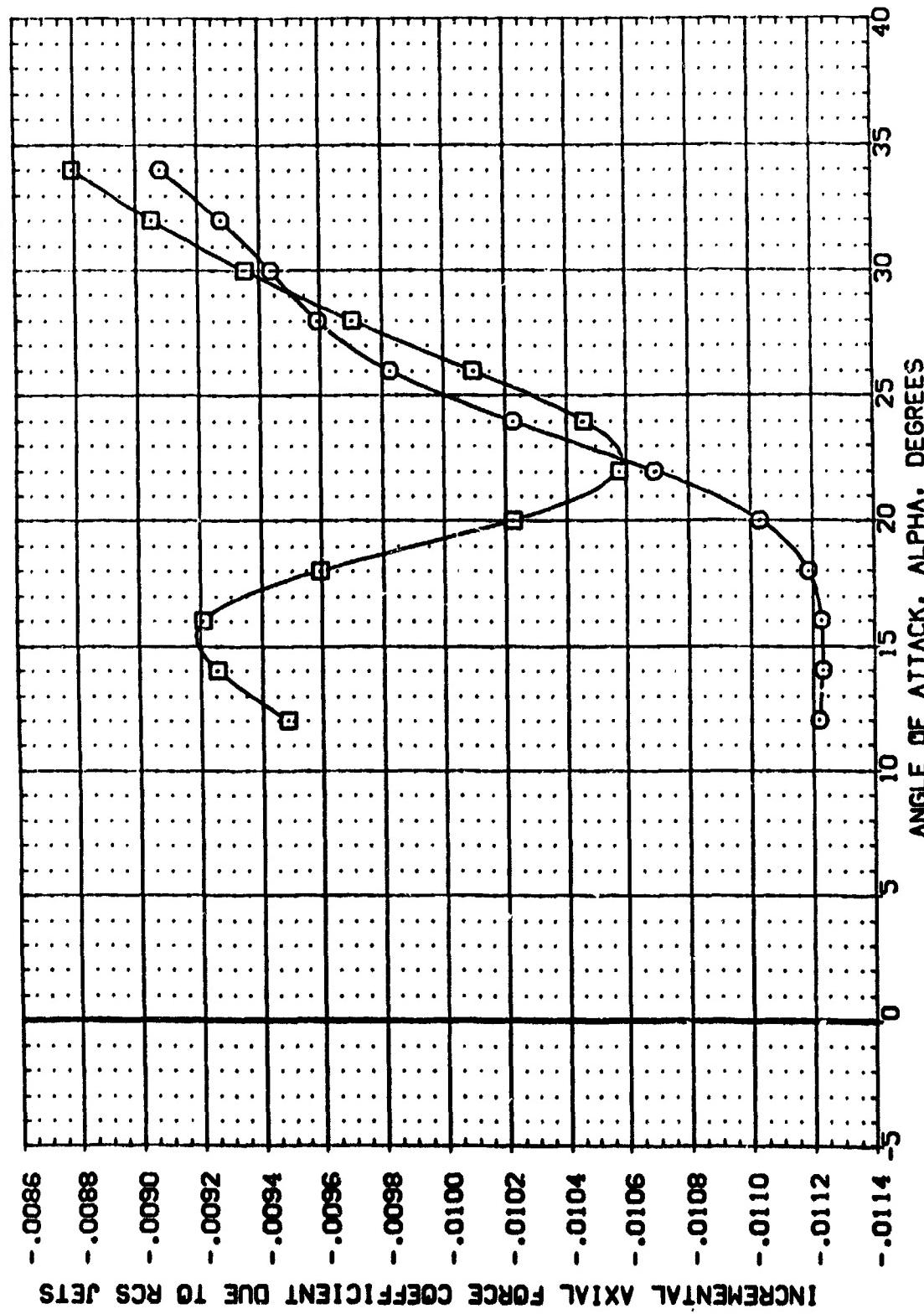


ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER ( $P_J/P_{J\infty} = 25$ )  
 (A)MACH = 4.00  
 PAGE 193

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(APPOSE) MA-7, UPN 1031, ROCKWELL PRR CCR, CONF: BVTN4 BVTN4  
(APPOSE) MA-7, UPN 1031, ROCKWELL PRR CCR, CONF: BVTN4 BVTN4

REFERENCE INFORMATION  
REF. 7245 SQ.FT.  
LREF 7.8828 INCHES  
BREF 15.1152 INCHES  
XREF 12.9510 INCHES  
YREF 6.0000 INCHES  
ZREF .0150 INCHES

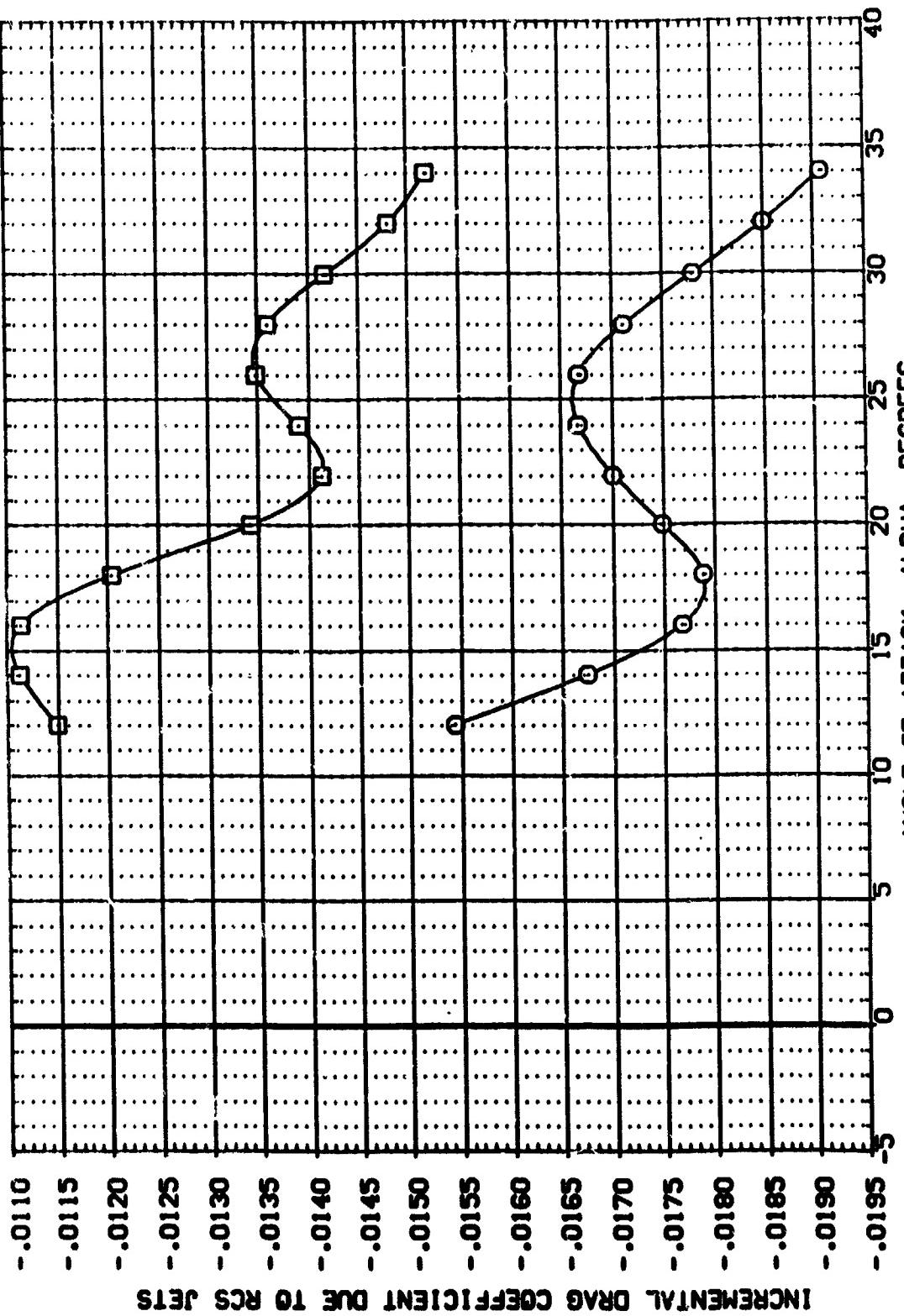
BET-A DLP-J RNL  
.000 199.000 3.000  
.000 559.000 3.000



ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER (PJ/PINF=25)  
(MACH = 4.00) PAGE 194

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APR049) MA-7-UPN 1031-ROCKWELL FFR ORB. CONF.: BMTN4  
 (APR053) MA-7-UPN 1031-ROCKWELL FFR ORB. CONF.: BMTN4

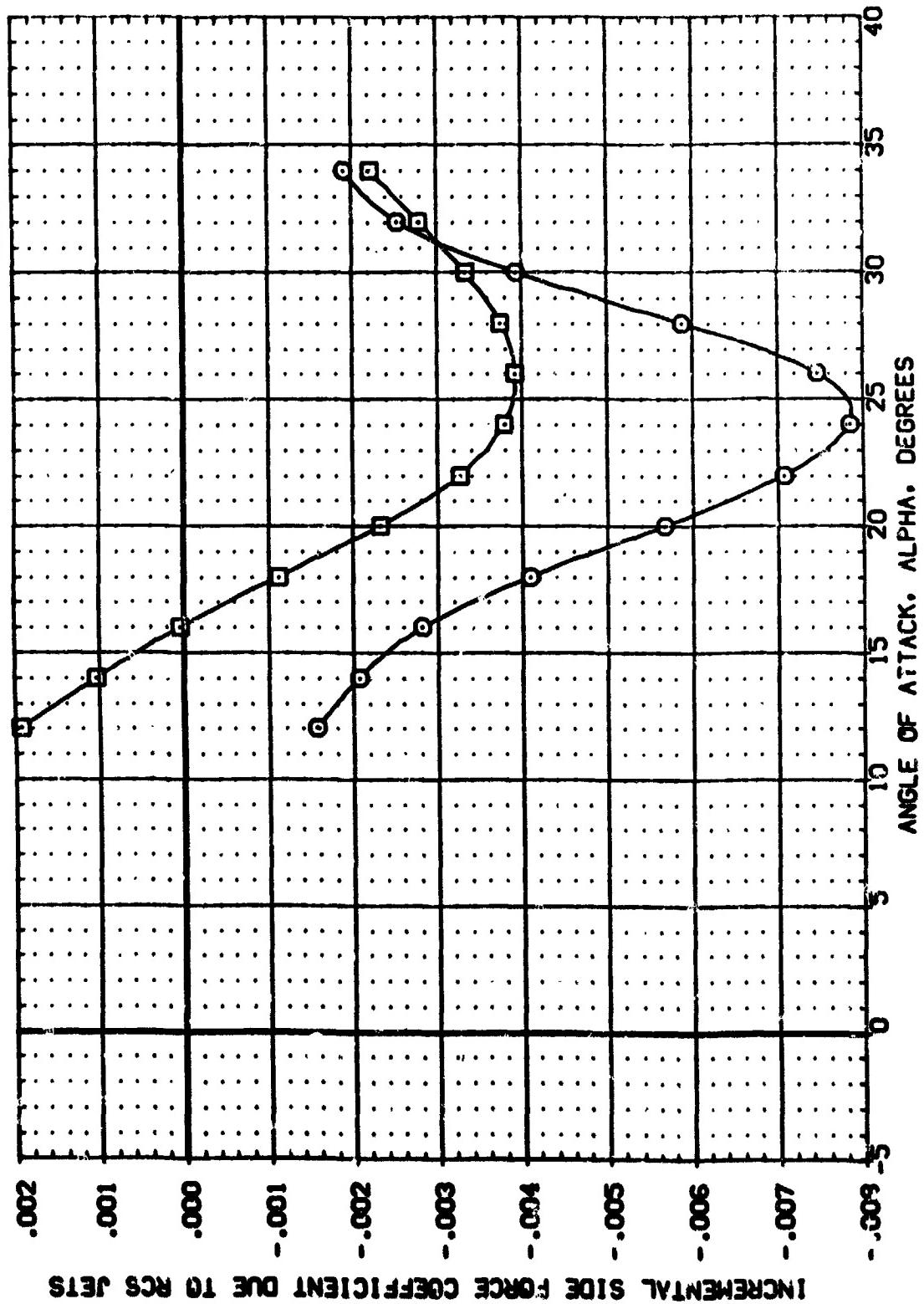
REFERENCE INFORMATION  
 SREF .7245 SO.FT.  
 LREF 7.8828 INCHES  
 GREF 15.1152 INCHES  
 XZFP 12.9510 INCHES  
 YMFP 3.0000 INCHES  
 ZZFP 6.0000 INCHES  
 C:50  
 SCALE



ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER (PJ/PINF=25)  
 $(\Delta)MACH = 4.00$

DATA SET NAME: CONFIGURATION DESCRIPTION  
[AP019] MA-7.UPTN 1031. REEDWELL PRR CRB. CONF: BMTN4  
[AP033] MA-7.UPTN 1031. REEDWELL PRR CRB. CONF: BVTN4

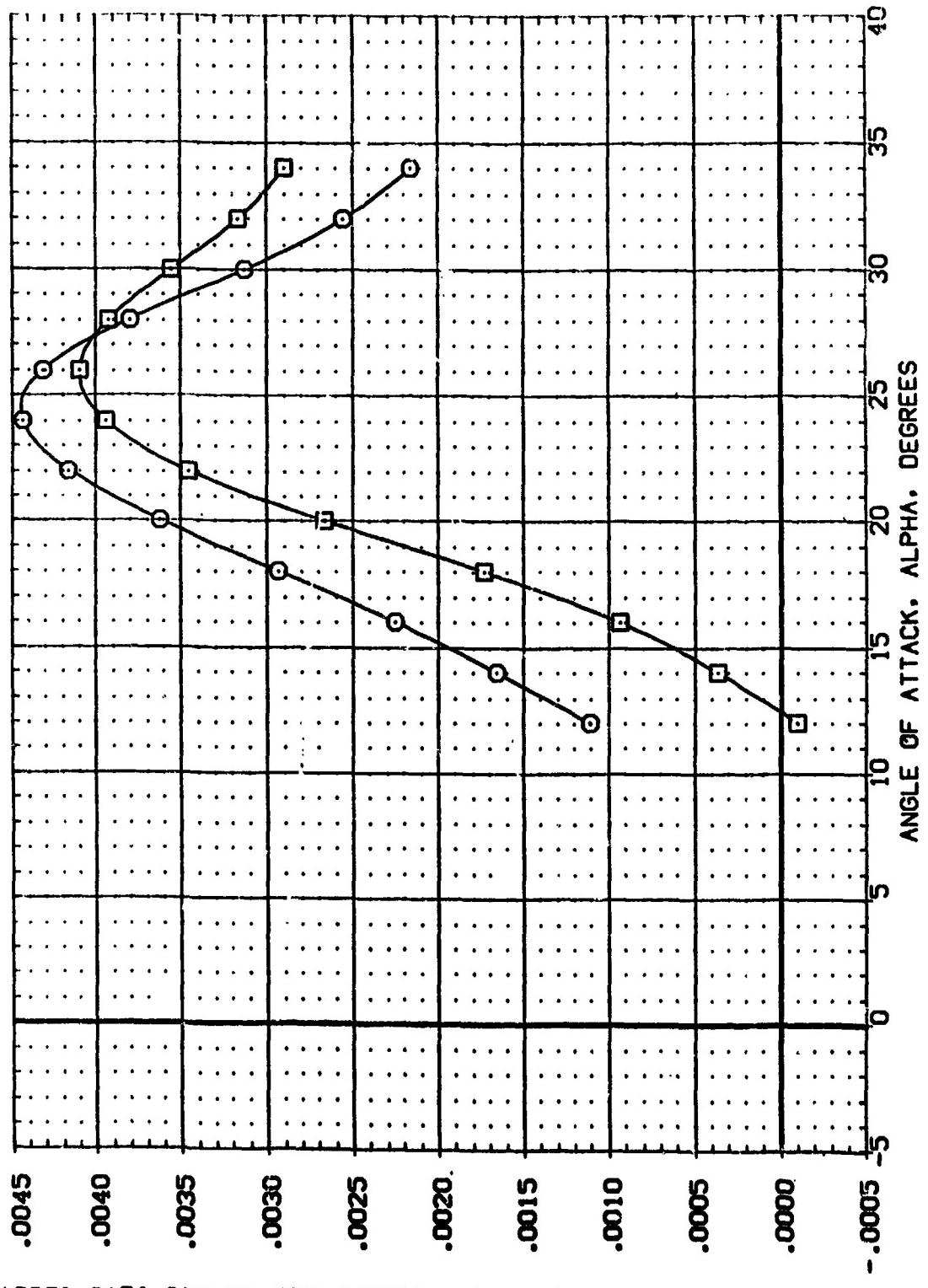
REFERENCE INFORMATION  
SREF 7245 SQ.FT.  
LREF 7.8828 INCHES  
BREF 15.1152 INCHES  
XRP 12.9510 INCHES  
YRP 6.0000 INCHES  
ZRP .0150 INCHES  
SCALE



ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER (PJ/PINF=25)  
MACH = 4.00  
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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APR049) MA-7, UPNT 1031, ROCKWELL PRR OF 1, CONF: BMTN4  
 (APR053) MA-7, UPNT 1031, ROCKWELL PRR OF 3, CONF: BMTN4

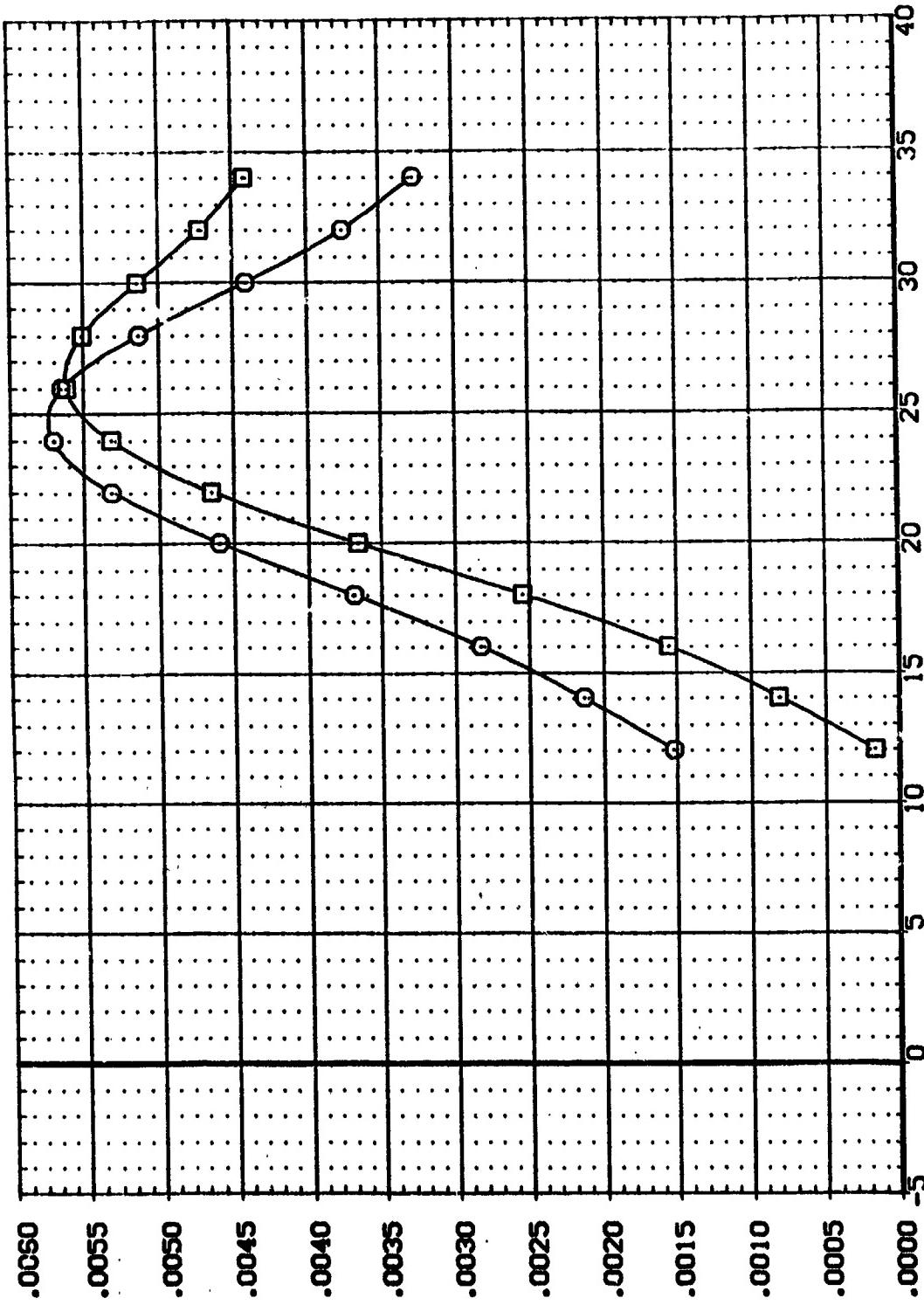
	BETA	DLPO-J	RNL
SREF	.000	.199.000	1.000
LREF	.000	.559.000	3.000
BREF			
XJRP			
YJRP			
ZJRP			
SCALE			



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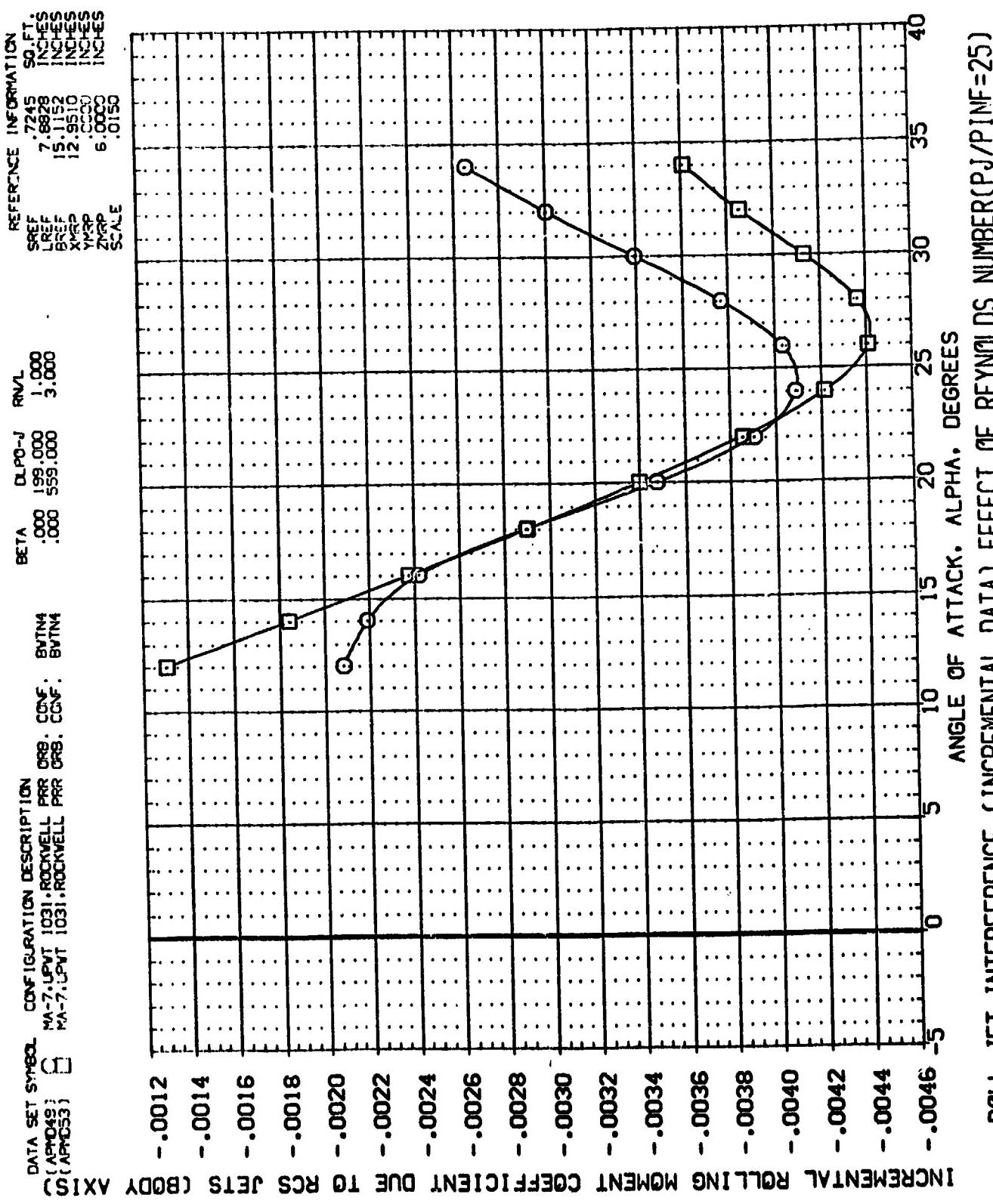
DATA SET STREAM  
(APR09)  
(APR63)

REFERENCE INFORMATION  
SREF .7215 INCHES  
LREF 7.8828 INCHES  
BREF 15.152 INCHES  
XRP 12.9510 INCHES  
YRP .0000 INCHES  
ZRP 6.0000 INCHES  
SCALE .0150



INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (STABILITY AXIS)

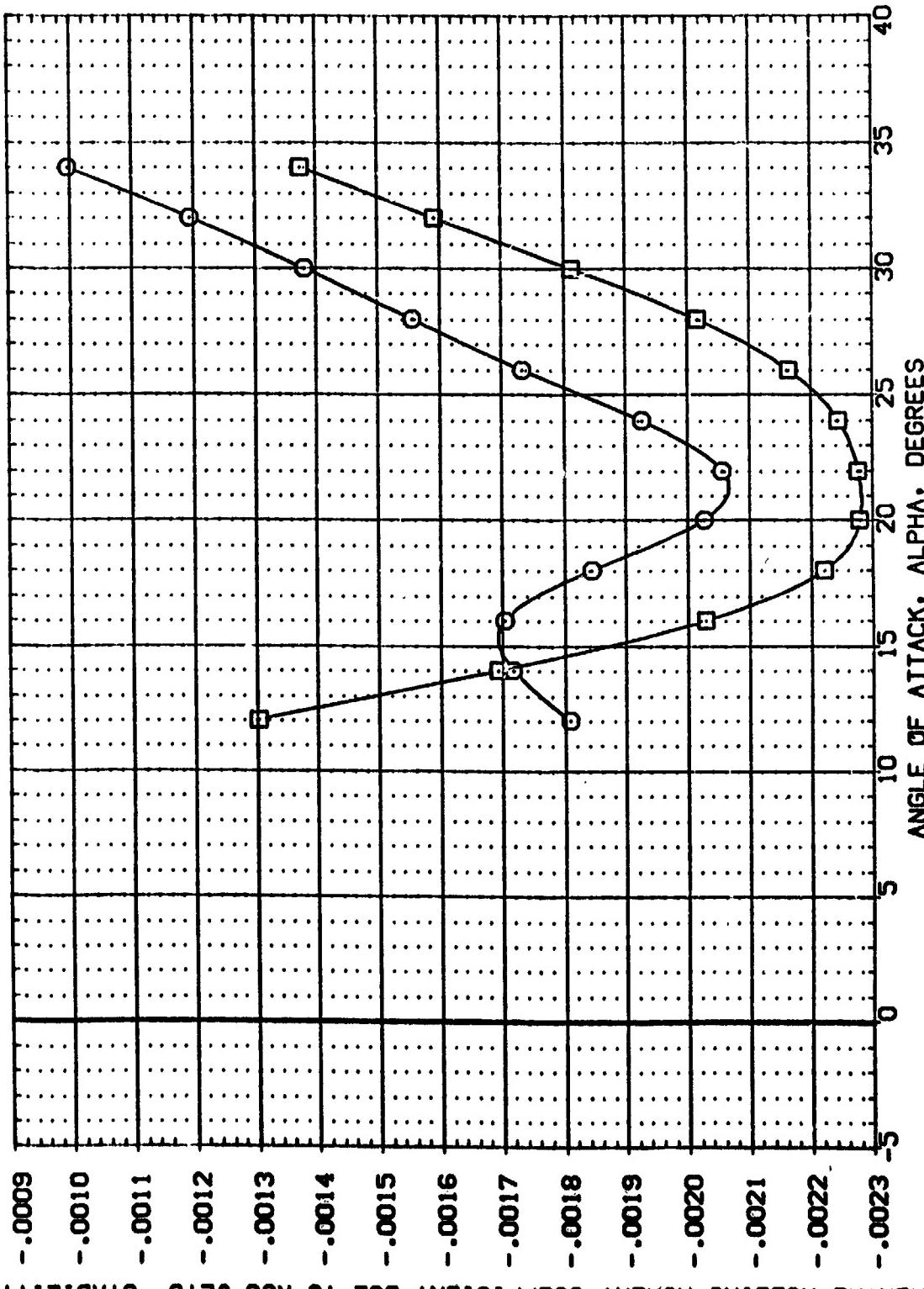
ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER (PJ/PINF=25)  
MACH = 4.00  
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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
AP049 MA-7 UPNT 1031 ROCKWELL PRR OBG. CONF. BMTM  
AP053 MA-7 UPNT 1031 ROCKWELL PRR OB3. CONF. BMTM

REFERENCE INFORMATION  
SREF 7.7245 SQ.FT.  
LREF 7.8928 INCHES  
BREF 15.152 INCHES  
XREF 12.8610 INCHES  
YREF .0000 INCHES  
ZREF 6.0000 INCHES  
SCALE .0150

BETA DLP0-J RNL  
.000 199.000 1.000  
.000 559.000 3.000

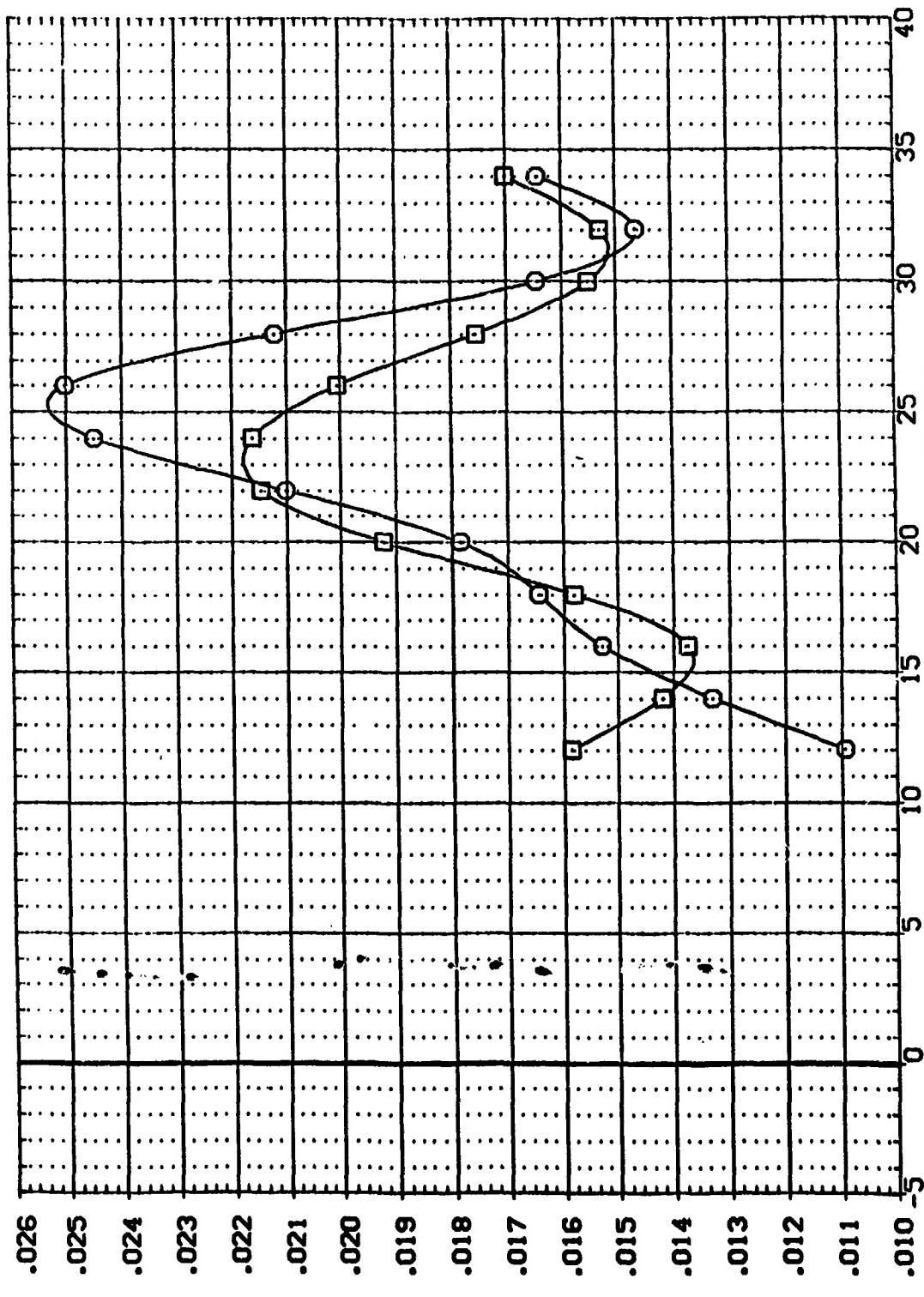


INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS STABILITY AXIS

ROLL JET INTERFERENCE (INCREMENTAL DATA) EFFECT OF REYNOLDS NUMBER (PJ/PINF=25)  
(A)MACH = 4.00  
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DATA SET NAME: CONFIGURATION DESCRIPTION  
 (APMD4) MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.  
 (APRD2) MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.  
 DLTBTA PO-JET RNVL  
 -2.500 .000 1.000  
 -5.000 .000 1.000  
 BMVN4 BMVN4  
 BMVN4 BMVN4

REFERENCE INFORMATION  
 SREF 7245 SC. FT.  
 LREF 7.6532 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0150 INCHES  
 SCALE



INCREMENTAL NORMAL FORCE COEFFICIENT DUE TO SIDESLIP

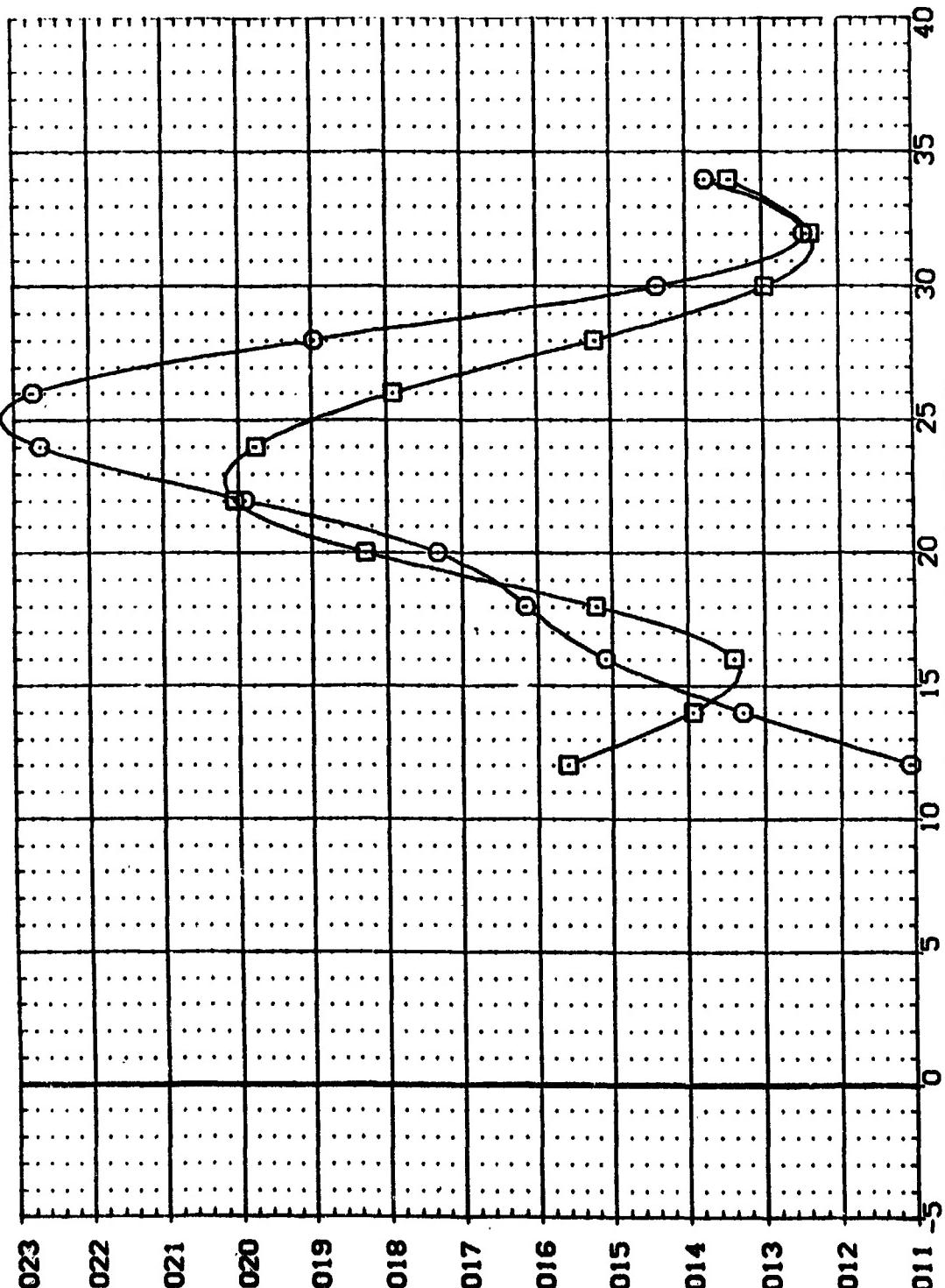
ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE

( $\Delta MACH = 4.00$ )

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
(AFTM1) MA-7.UPT 1031.ROCKWELL PRR GRB. CONF: BWTNA  
(AFTM2) MA-7.UPT 1031.ROCKWELL PRR GRB. CONF: BWTNA

REFERENCE INFORMATION  
SREF .7245 SC. FT.  
LREF 7.6928 INCHES  
BREF 15.1152 INCHES  
ANRP 12.9510 INCHES  
YMRP 6.0000 INCHES  
ZMRP .0150 INCHES  
SCALE

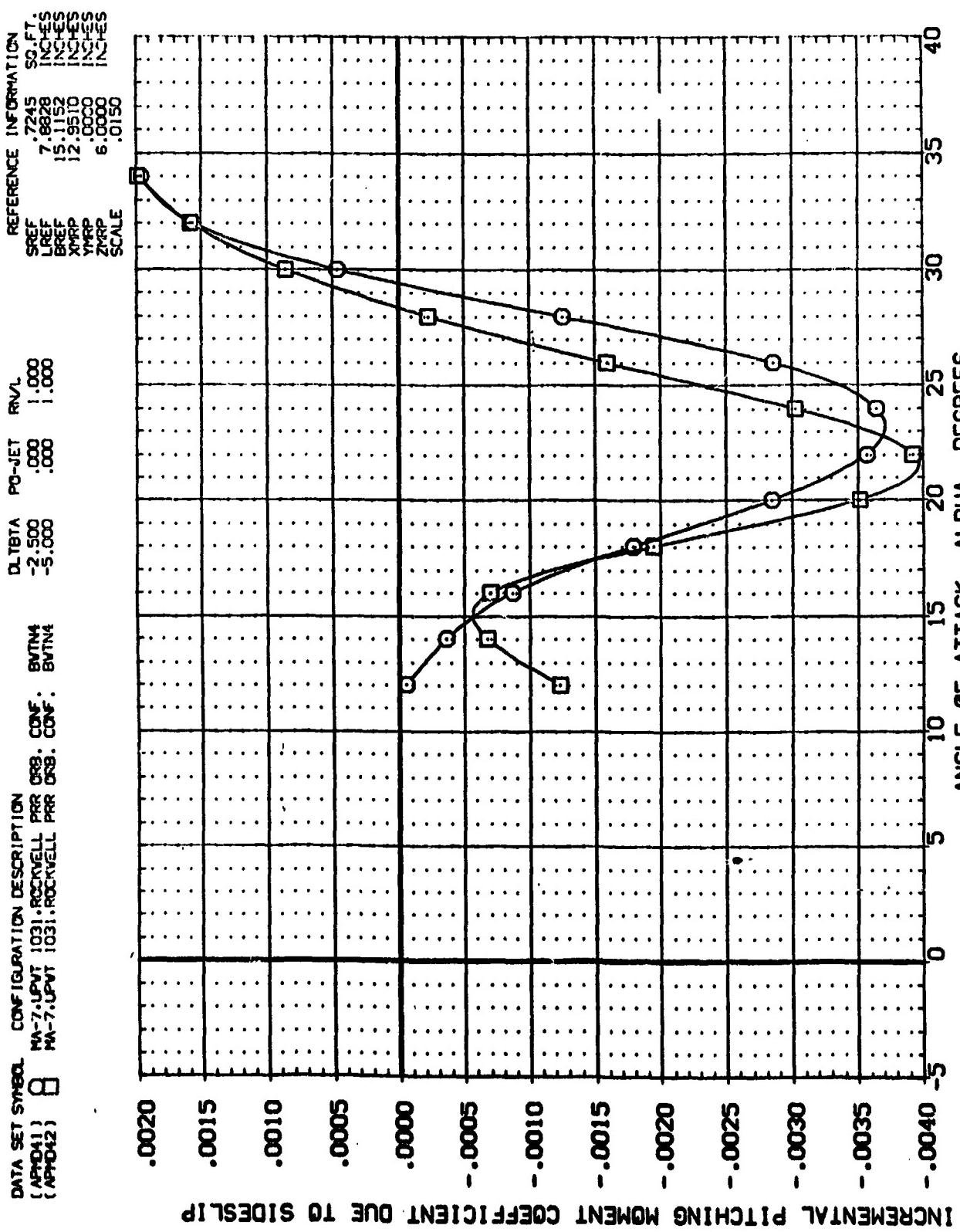


INCREMENTAL LIFT COEFFICIENT DUE TO SIDESLIP

ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE

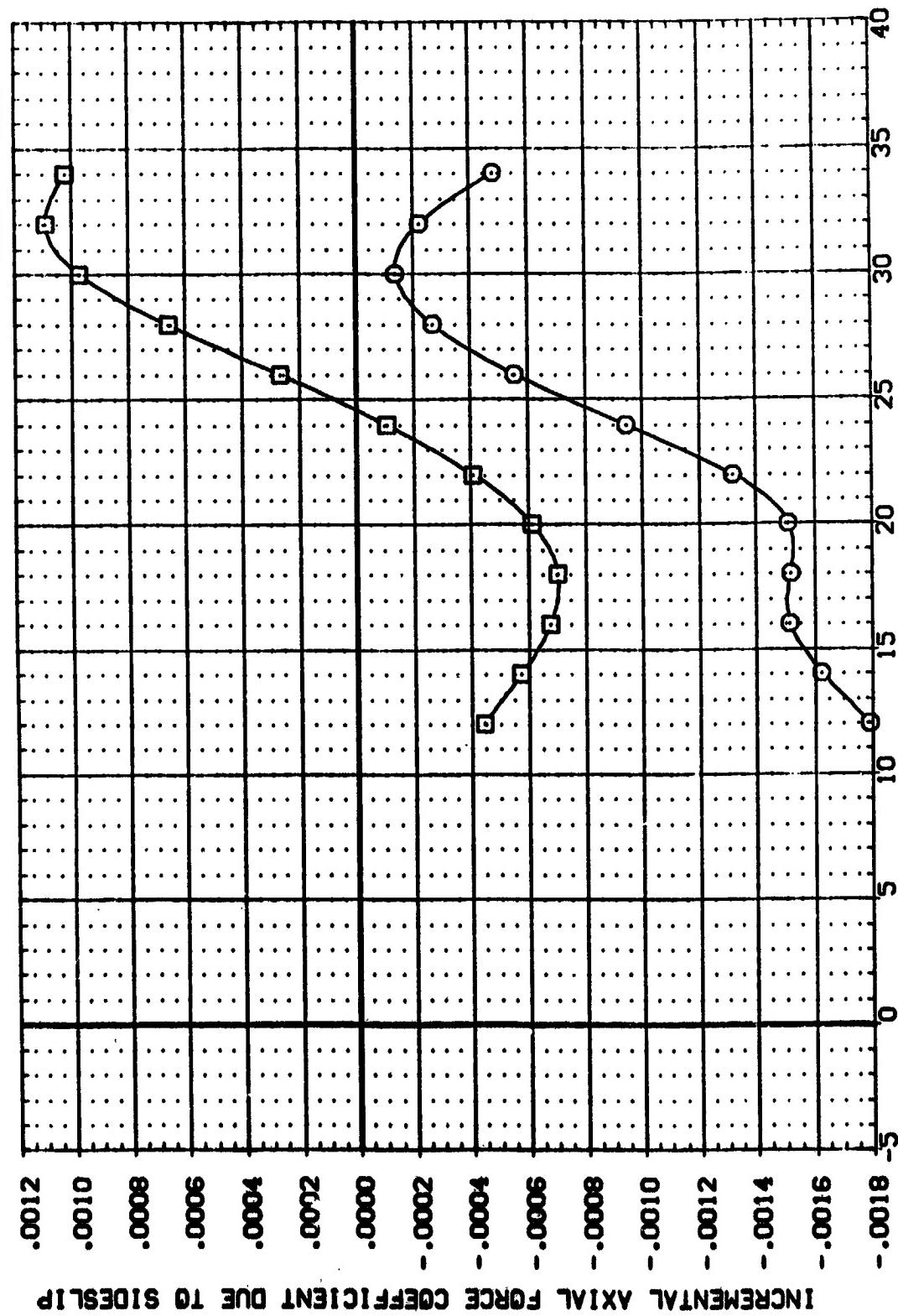
MACH = 4.00

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ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 $(\Delta V)_MACH = 4.00$

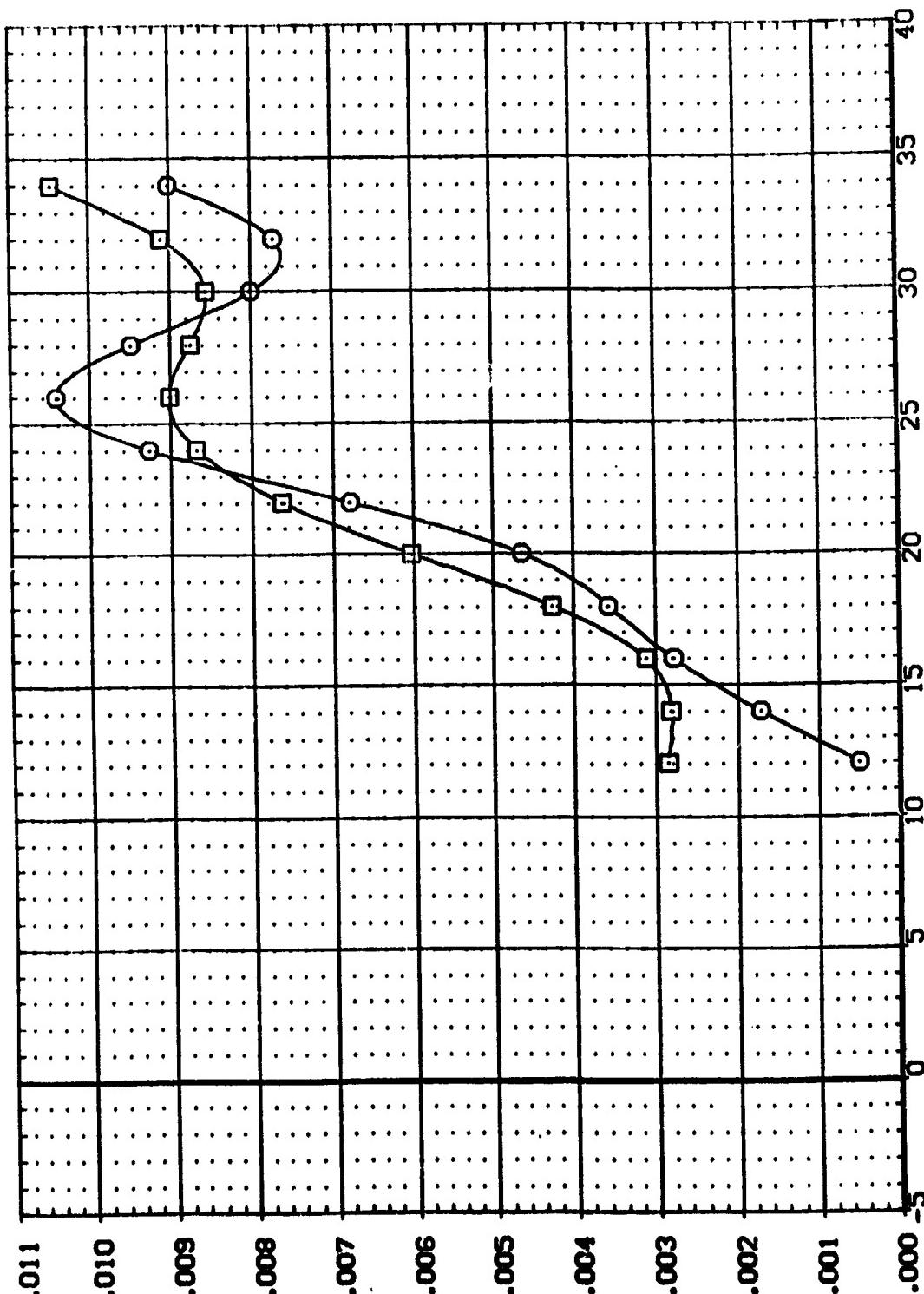
DATA SET NAME: CONF1031.REF. CONFI: BMTN4  
 (APR041) MA-7:UPNT 1031.REF. CONF: BMTN4  
 (APR042) MA-7:DNNT 1031.REF. CONF: BMTN4  
 REFERENCE INFORMATION  
 SREF: 7.7245 SO.FT.  
 LREF: 7.8828 INCHES  
 BREF: 15.1152 INCHES  
 X-CAP: 12.9510 INCHES  
 Y-CAP: 6.0000 INCHES  
 Z-CAP: 6.0150 INCHES  
 SCALE



.ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 $(\text{MACH}) = 4.00$

DATA SET SYMBOL: CONFIGURATION DESCRIPTION  
 (APM041) 8 MA-7. UPIT 1031. ROCKWELL PRR ORB. CONF: BMTM  
 (APM042) 8 MA-7. UPIT 1031. ROCKWELL PRR ORB. CONF: BMTN4

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP .0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150

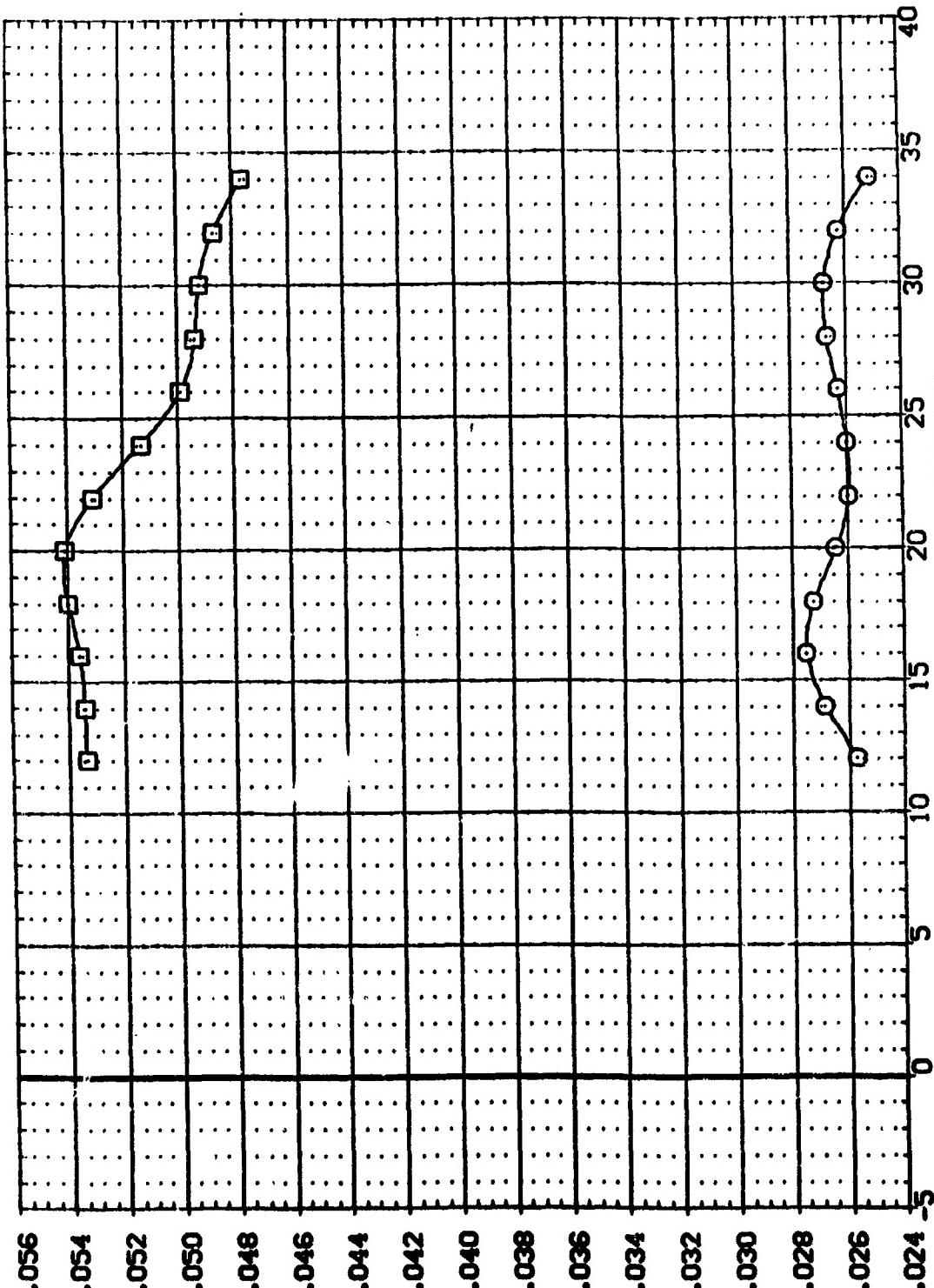


INCREMENTAL DRAG COEFFICIENT DUE TO SIDESLIP

ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 (A)MACH = 4.00

DATA SET NAME: CONFIGURATION DESCRIPTION  
(APPD1) MA-7-UPN 1031:ROCKWELL F/A-18C: COF: BYTM  
(APPD2) MA-7-UPN 1031:ROCKWELL F/A-18C: COF: BYTM

REFERENCE INFORMATION  
SREF .7245 SOFT  
LREF 7.8928 INCHES  
BREF 15.1152 INCHES  
XRP 12.9510 INCHES  
YRP .0000 INCHES  
ZRP 6.0000 INCHES  
SCALE .1150



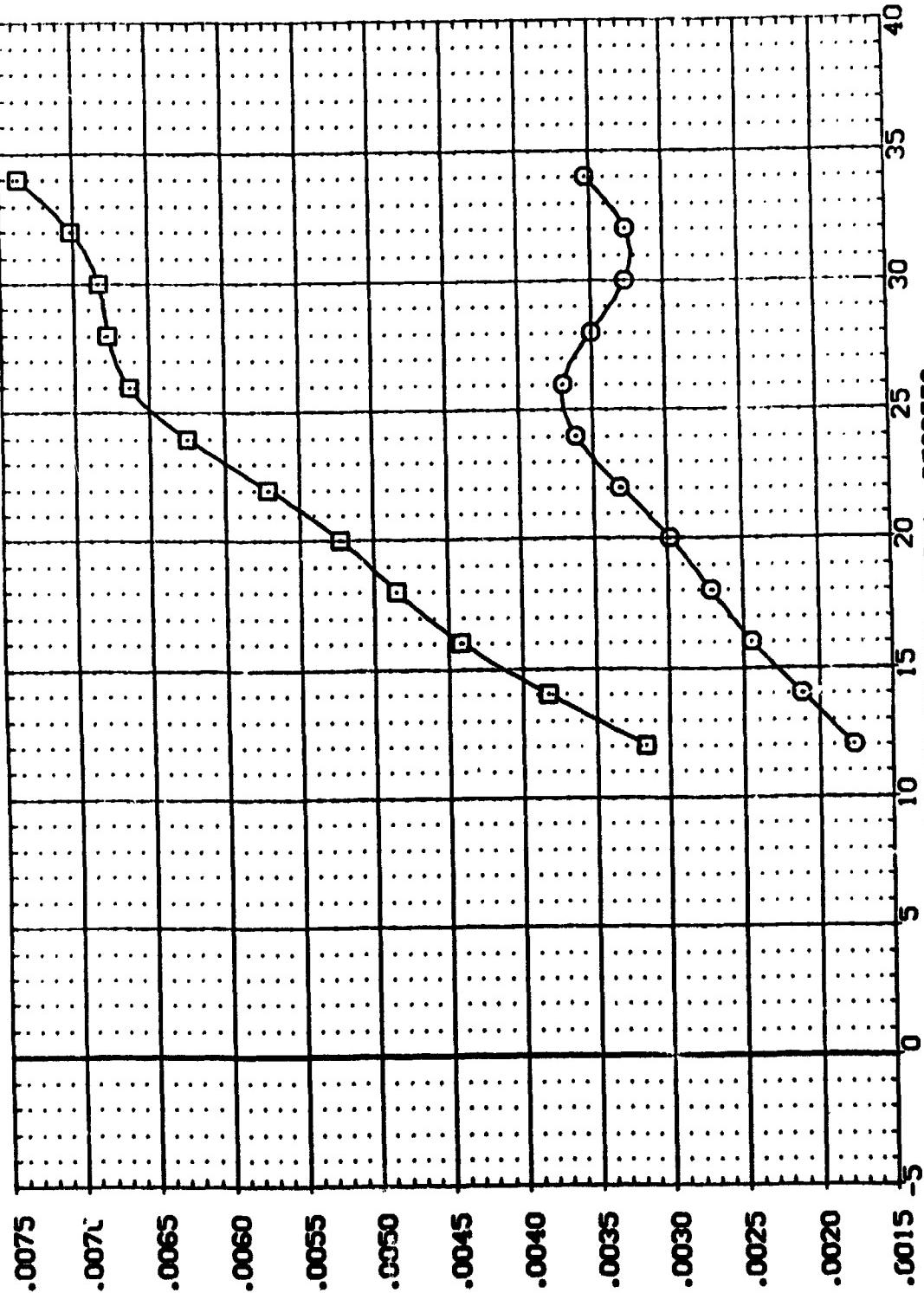
INCREMENTAL SIDE FORCE COEFFICIENT DUE TO SIDESLIP

ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
( $\alpha$ )MACH = 4.00

INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO SIDESLIP (BODY AXES)

DATA SET NAME: CONF1 MA-7, UPN 1031 ROCKWELL PRR DB8. CONF: BMTN4 BMTN4  
 (APFO41) 8 MA-7, UPN 1031 ROCKWELL PRR DB8. CONF: BMTN4 BMTN4  
 (APFO42)

REFERENCE INFORMATION  
 SREF .7245 SO.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP .0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150



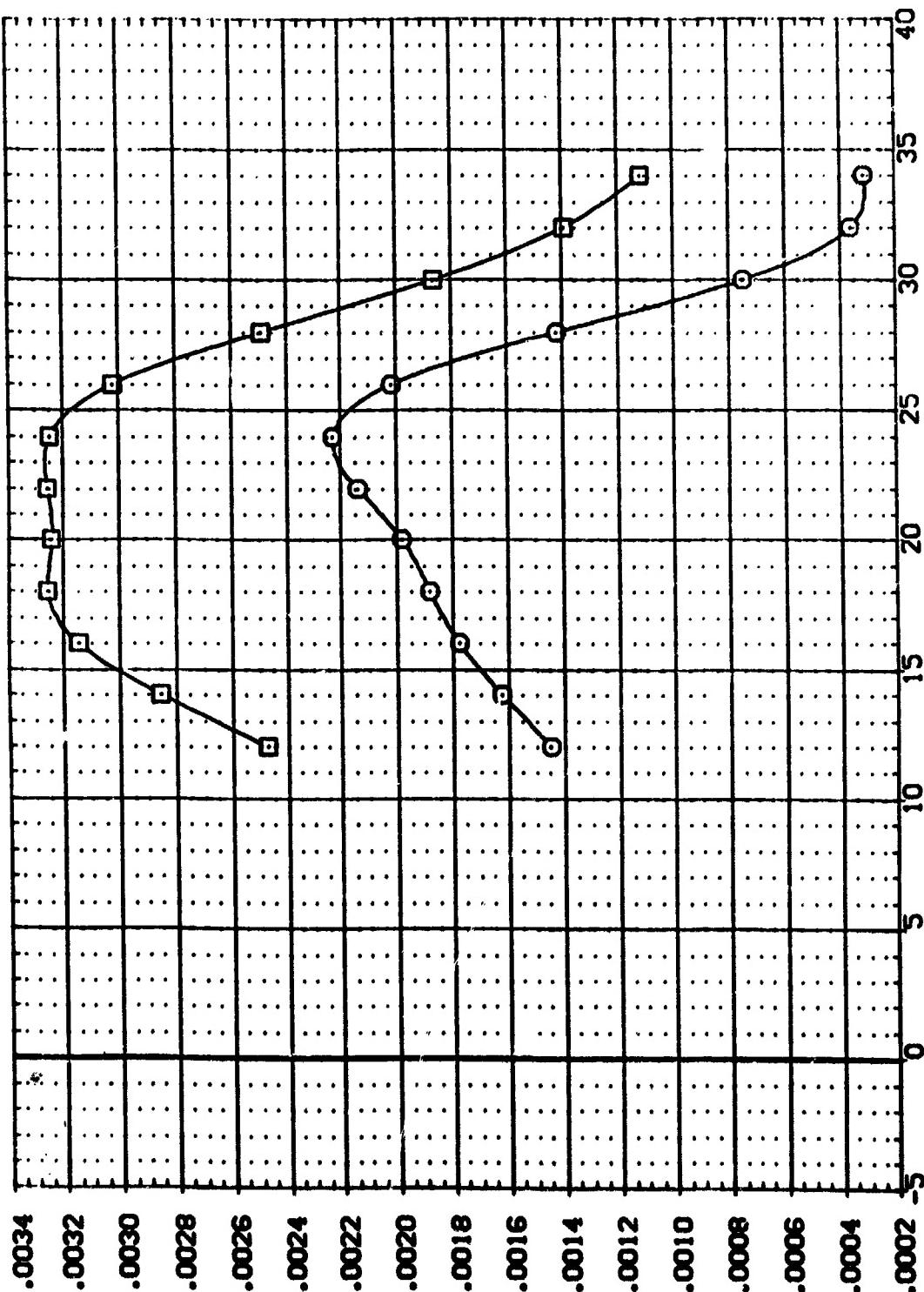
ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 (MACH = 4.00)

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DATA SET NAME: CONF1  
[APD041] MA-7-1SPN 1031. REEDWELL PRR DBS. CONF: BYTN4  
[APD042] MA-7-1SPN 1031. REEDWELL PRR DBS. CONF: BYTN4

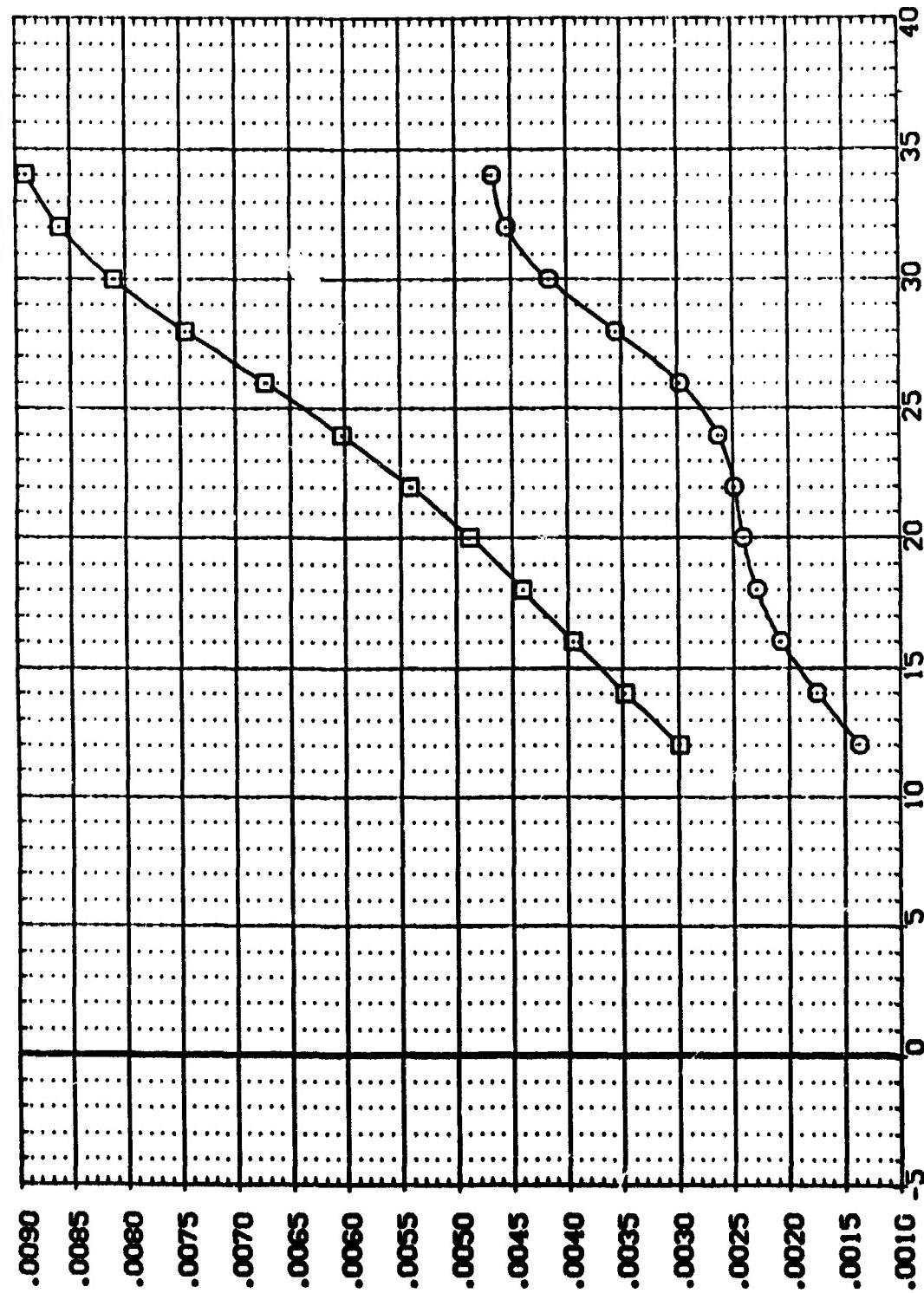
REFERENCE INFORMATION  
SREF 7245 SQ.FT.  
LREF 7.8828 INCHES  
BREF 15.1152 INCHES  
XCRP 12.9510 INCHES  
YCRP 6.0000 INCHES  
ZCRP 6.0000 INCHES  
SCALE

INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO SIDESLIP(STAB AXIS)



ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
CAIMACH = 4.00

DATA SET SNAME: CONFIGURATION DESCRIPTION: REFERENCE INFORMATION  
 (AFD41) MA-7, UPNT 1031; RECNELL PER CRB; CONF: BYTN4 SO. FT.  
 (AFD42) MA-7, UPNT 1031; RECNELL PER CRB; CONF: BYTN4 INCHES  
 SREF 7.7245 INCHES  
 LREF 7.8829 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF .0000 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150

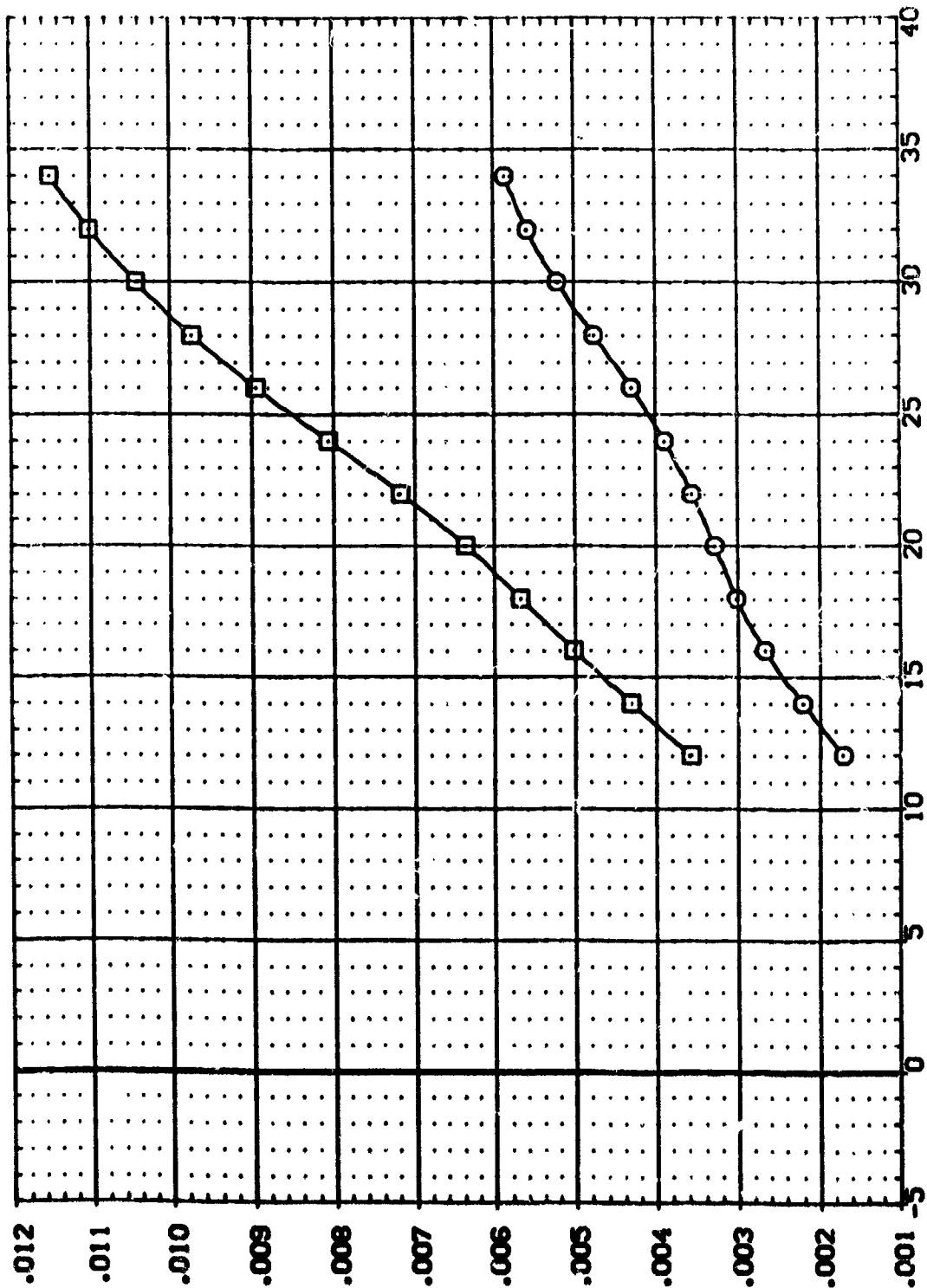


INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO SIDESLIP (BODY AXIS)

ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
 (AIRCRAFT = 4.00)

DATA SET SPEED. CONFIGURATION DESCRIPTION  
(APPENDIX 1) 8 MA-7.5PNT 1031. ROCKFELL PER 038. CONF.: SVTNA4  
(APPENDIX 2) 8 MA-7.5PNT 1031. ROCKFELL PER 038. CONF.: SVTNA4

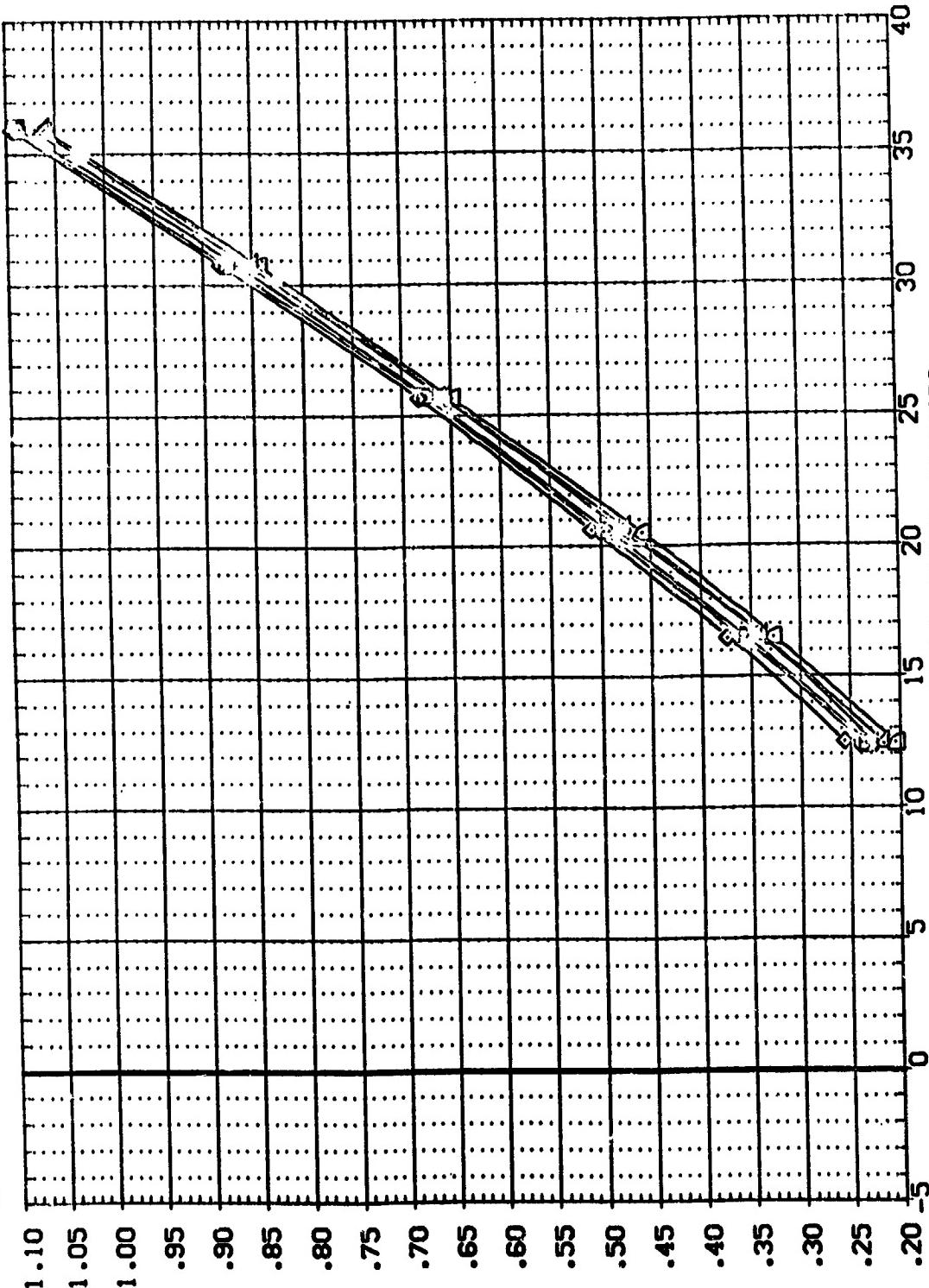
REFERENCE INFORMATION  
SREF .7245 SQ.FT.  
LREF 7.8873  
BREF 15.1151  
XREF 12.8510  
YREF .0000  
ZREF 6.0000  
SCALE .015



INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO SIDESLIP (STAB AXIS)

ROLL JET INTERFERENCE (INCREMENTAL DATA), EFFECT OF SIDESLIP ANGLE  
(A)MACH = 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	PO-JET	R/N/L	REFERENCE INFORMATION
(CPD52)	MA-7, UPWT 1031, ROCKWELL PRR CRB, CONF: BVTN40	.000	.000	1.000	SREF .7245 SQ.FT.
(CPD60)	MA-7, UPWT 1031, ROCKWELL PRR CRB, CONF: BVTN40	.000	.000	.000	SPF .8828 INCHES
(CPD61)	MA-7, UPWT 1031, ROCKWELL PRR CRB, CONF: BVTN40	.000	.000	.000	BREF 15.1152 INCHES
(CPD63)	MA-7, UPWT 1031, ROCKWELL PRR CRB, CONF: BVTN40	.000	.000	.000	XREF 12.8510 INCHES
(CPD64)	MA-7, UPWT 1031, ROCKWELL PRR CRB, CONF: BVTN40	.000	.000	.000	YREF .0000 INCHES
(CPD65)	MA-7, UPWT 1031, ROCKWELL PRR CRB, CONF: BVTN40	.000	.000	.000	ZREF 6.0000 INCHES
					SCALE .0150



NORMAL FORCE COEFFICIENT, CN

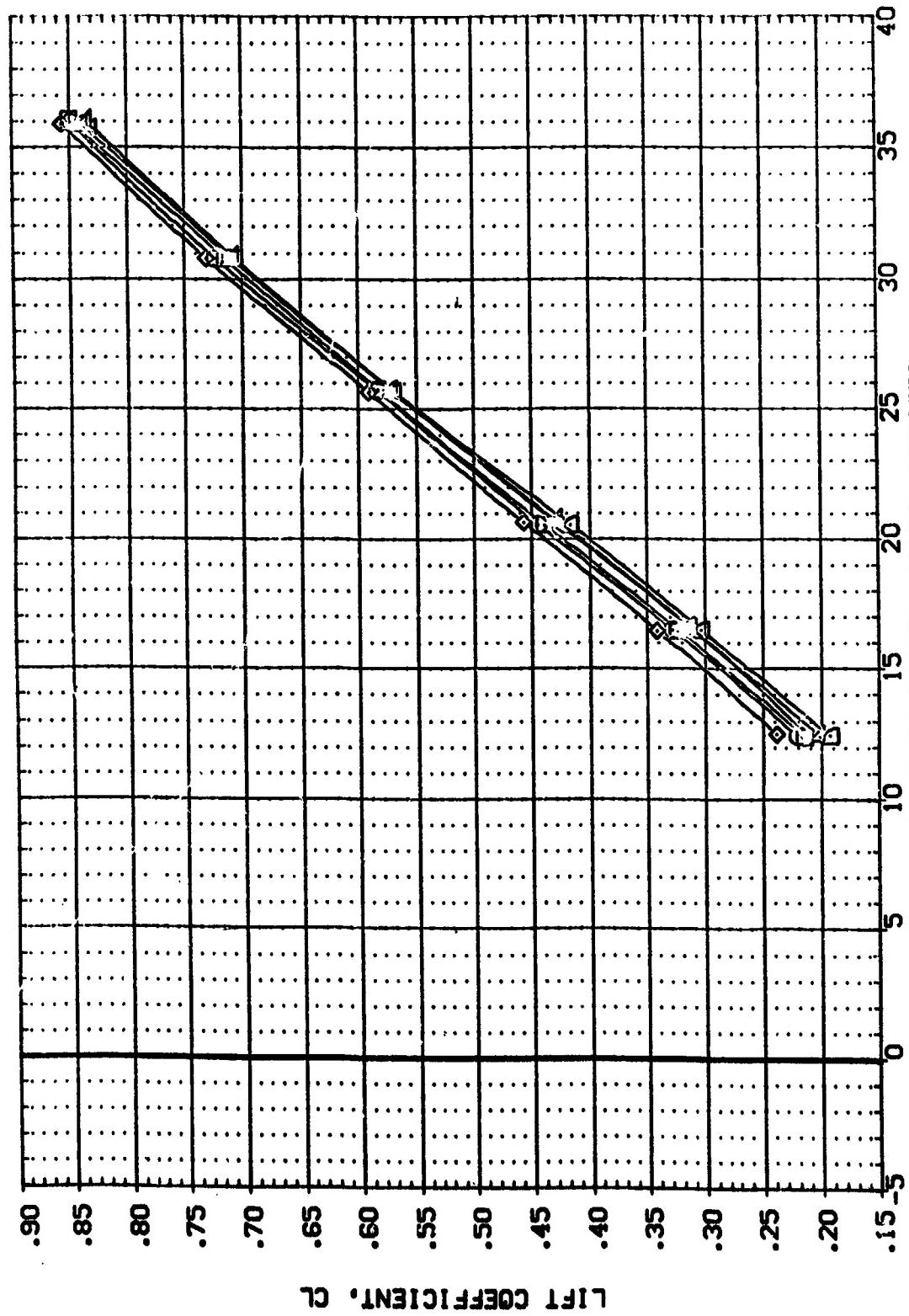
EFFECT OF PITCH/ROLL JETS FIRING TOWARD WING (LEFT-SIDE JETS ONLY)

(A)MACH = 4.00

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DATA SET SYMBOLS. CONFIGURATION DESCRIPTION  
 (CP059) MA-7-JET 1031 ROCKWELL PRR GRB. CONF. BWTN40  
 (CP060) MA-7-JET 1031 ROCKWELL PRR GRB. CONF. BWTN40  
 (CP061) MA-7-JET 1031 ROCKWELL PRR GRB. CONF. BWTN40  
 (CP063) MA-7-JET 1031 ROCKWELL PRR GRB. CONF. BWTN40  
 (CP064) MA-7-JET 1031 ROCKWELL PRR GRB. CONF. BWTN40  
 (CP066) MA-7-JET 1031 ROCKWELL PRR GRB. CONF. BWTN40

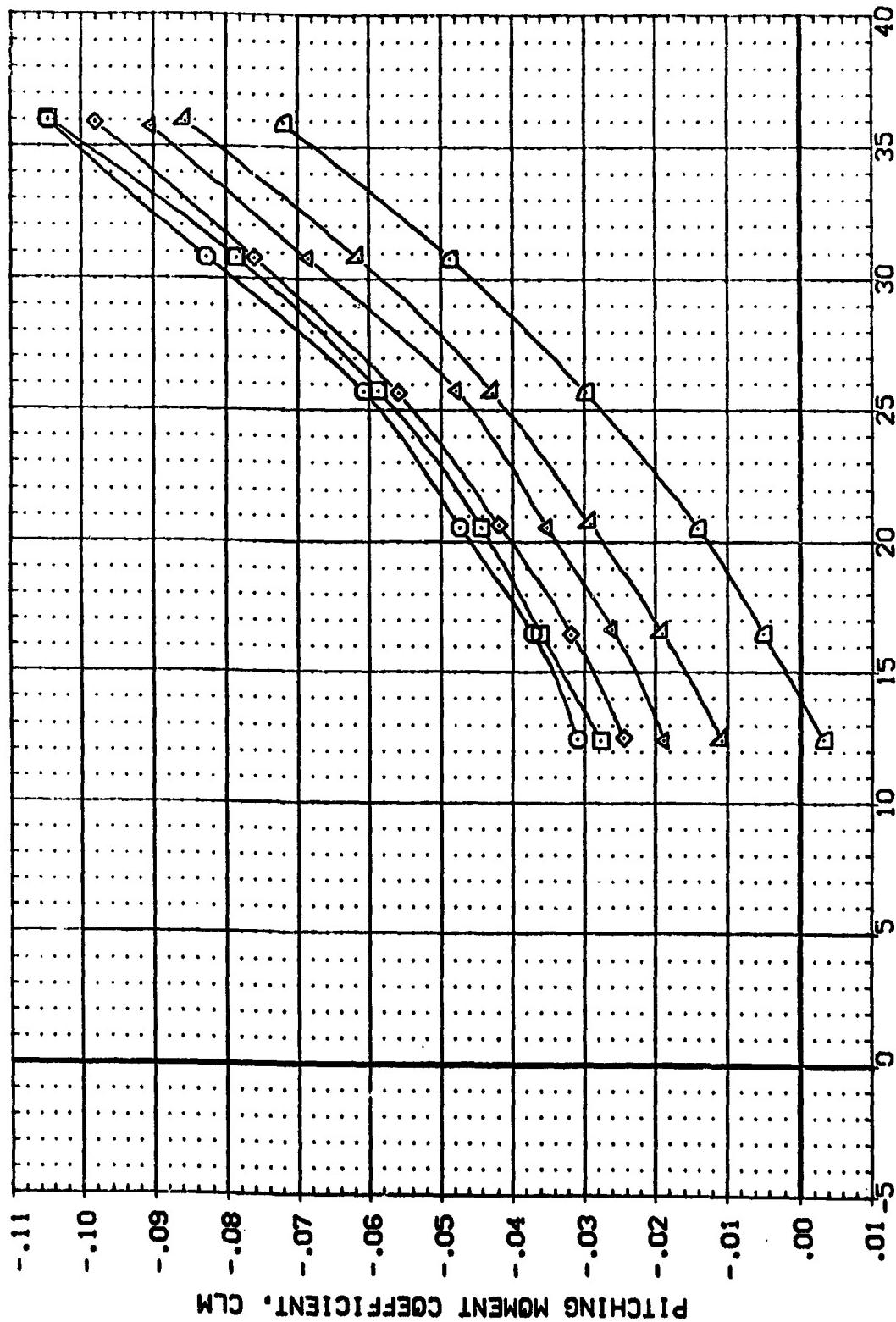
REFERENCE INFORMATION  
 SREF .7245 SO. FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0150 SCALE



EFFECT OF PITCH/ROLL JETS FIRING TOWARD WING (LEFT-SIDE JETS ONLY)  
 (A)MACH = 4.00

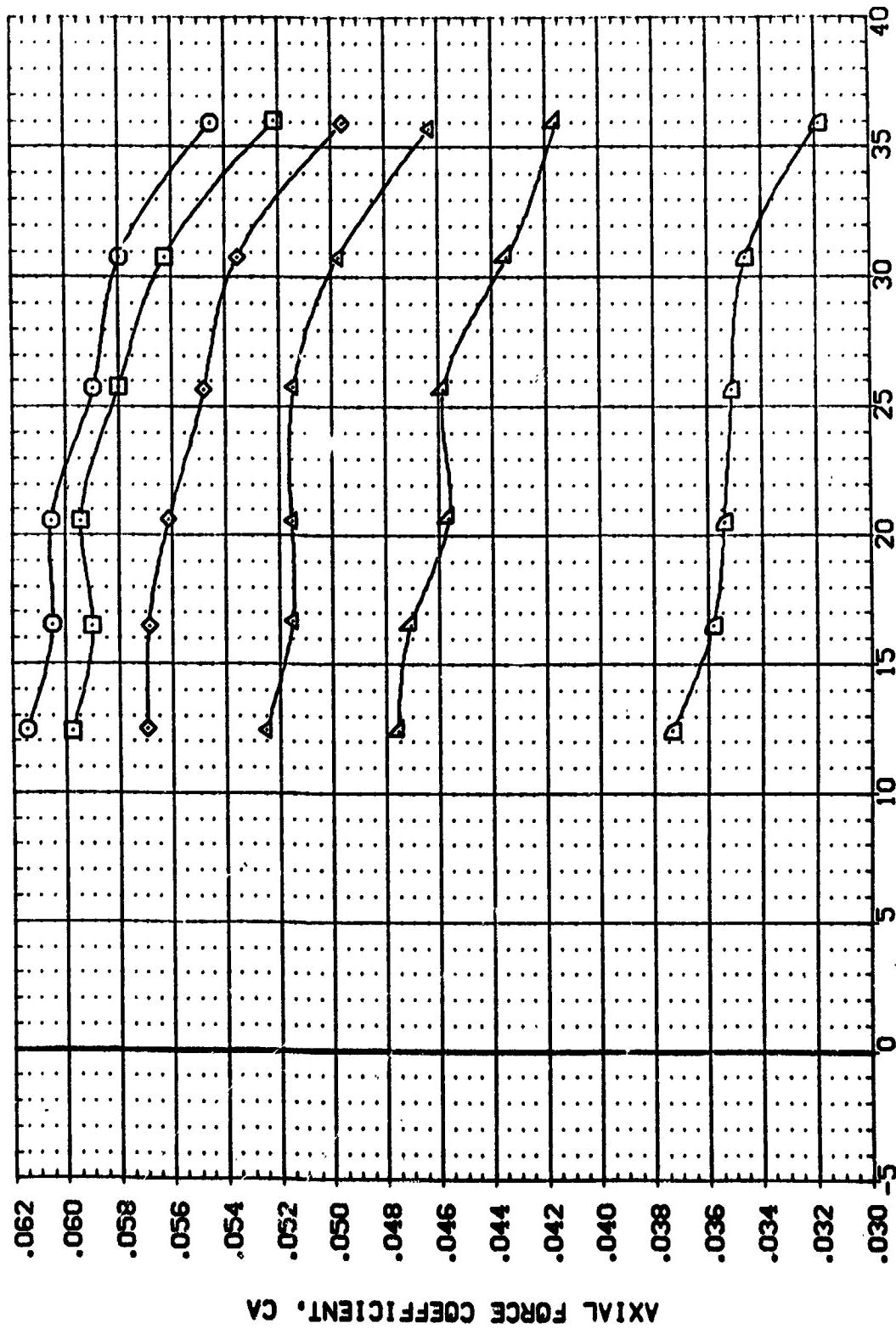
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DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	CONF.	BETA	P0-JET	RNL	REFERENCE INFORMATION
(OP058)	MA-7	UPVT	1031	ROCKWELL	PRR	.000	.000
(OP060)	MA-7	UPVT	1031	ROCKWELL	PRR	.000	.000
(OP061)	MA-7	UPVT	1031	ROCKWELL	PRR	.000	.000
(OP063)	MA-7	UPVT	1031	ROCKWELL	PRR	.000	.000
(OP064)	MA-7	UPVT	1031	ROCKWELL	PRR	.000	.000
(OP065)	MA-7	UPVT	1031	ROCKWELL	PRR	.000	.000
(OP066)	MA-7	UPVT	1031	ROCKWELL	PRR	.000	.000

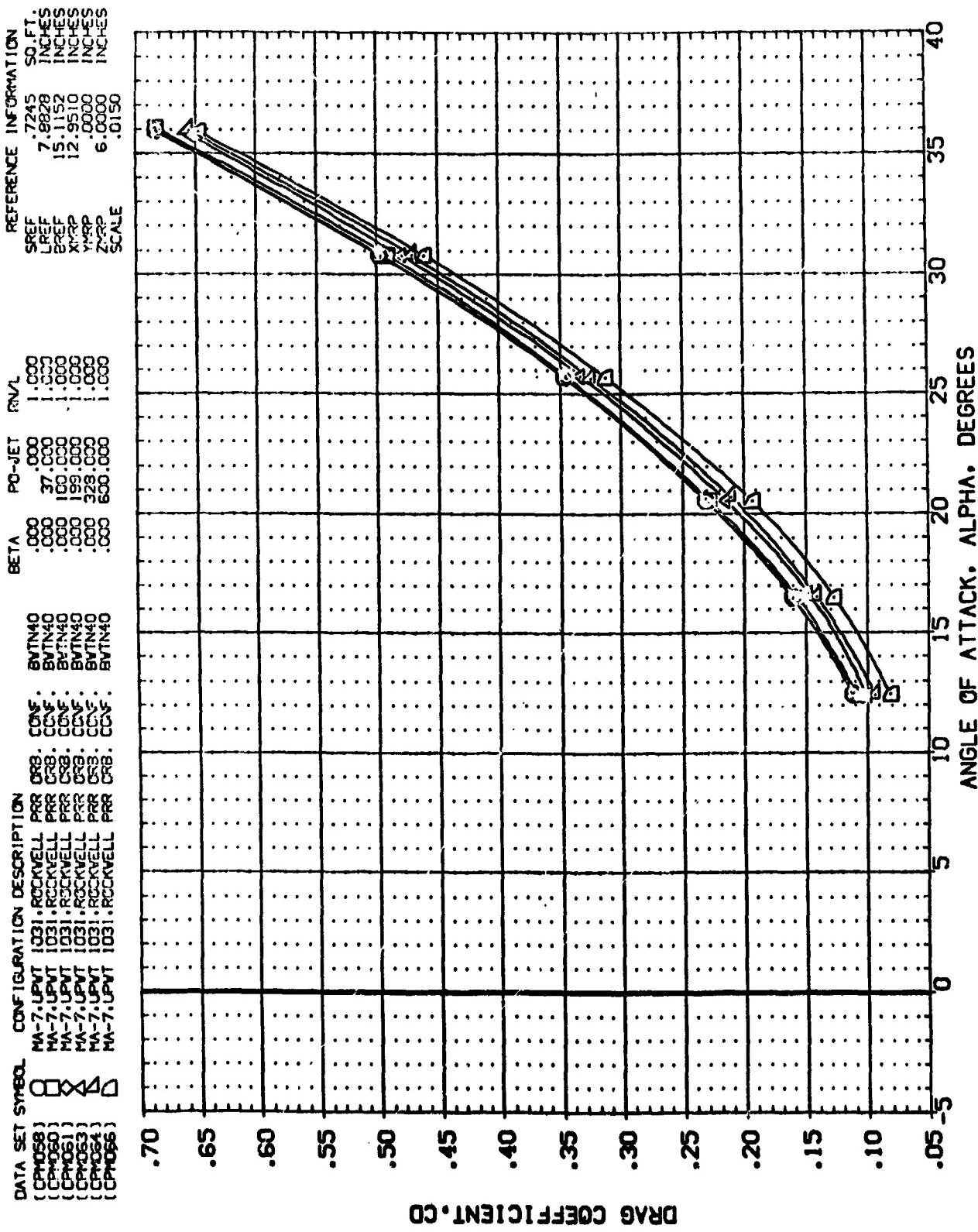


EFFECT OF PITCH/ROLL JETS FIRING TOWARD WING (LEFT-SIDE JETS ONLY)  
 $(\text{A})\text{MACH} = 4.00$

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RNL	BETA	P0-JET	REFERENCE INFORMATION
(CPH058)	MA-7, UPVT 1031, ROCKWELL PRR GRB, CONF: BVTN40	.000	.000	1.000	S2, FT: .7245
(CPH060)	MA-7, UPVT 1031, ROCKWELL PRR GRB, CONF: BVTN40	.000	.000	.37.000	LREF: 7.8828
(CPH061)	MA-7, UPVT 1031, ROCKWELL PRR GRB, CONF: BVTN40	.000	.000	.100.000	BREF: 15.1152
(CPH063)	MA-7, UPVT 1031, ROCKWELL PRR GRB, CONF: BVTN40	.000	.000	.199.000	RCFES: 12.9510
(CPH064)	MA-7, UPVT 1031, ROCKWELL PRR GRB, CONF: BVTN40	.000	.000	.328.000	RCFES: 6.0000
(CPH066)	MA-7, UPVT 1031, ROCKWELL PRR GRB, CONF: BVTN40	.000	.000	.600.000	RCFES: .0150



EFFECT OF PITCH/ROLL JETS FIRING TOWARD WING (LEFT-SIDE JETS ONLY)  
 $(\Lambda)$ MACH = 4.00



EFFECT OF PITCH/ROLL JETS FIRING TOWARD WING (LEFT-SIDE JETS ONLY)

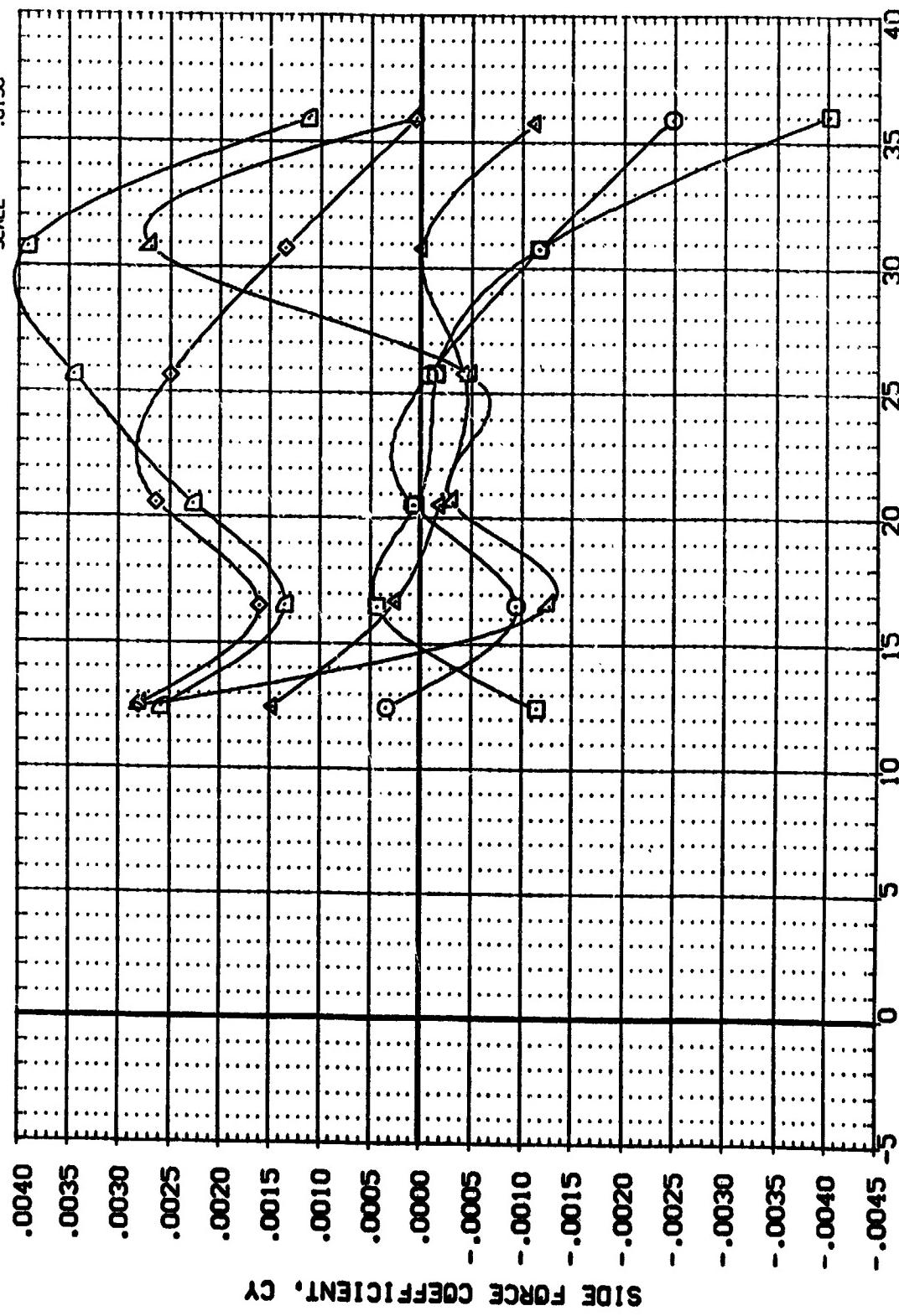
( $\Delta$ ) MACH = 4.00

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DATA SET SYMBOL CONFIGURATION DESCRIPTION

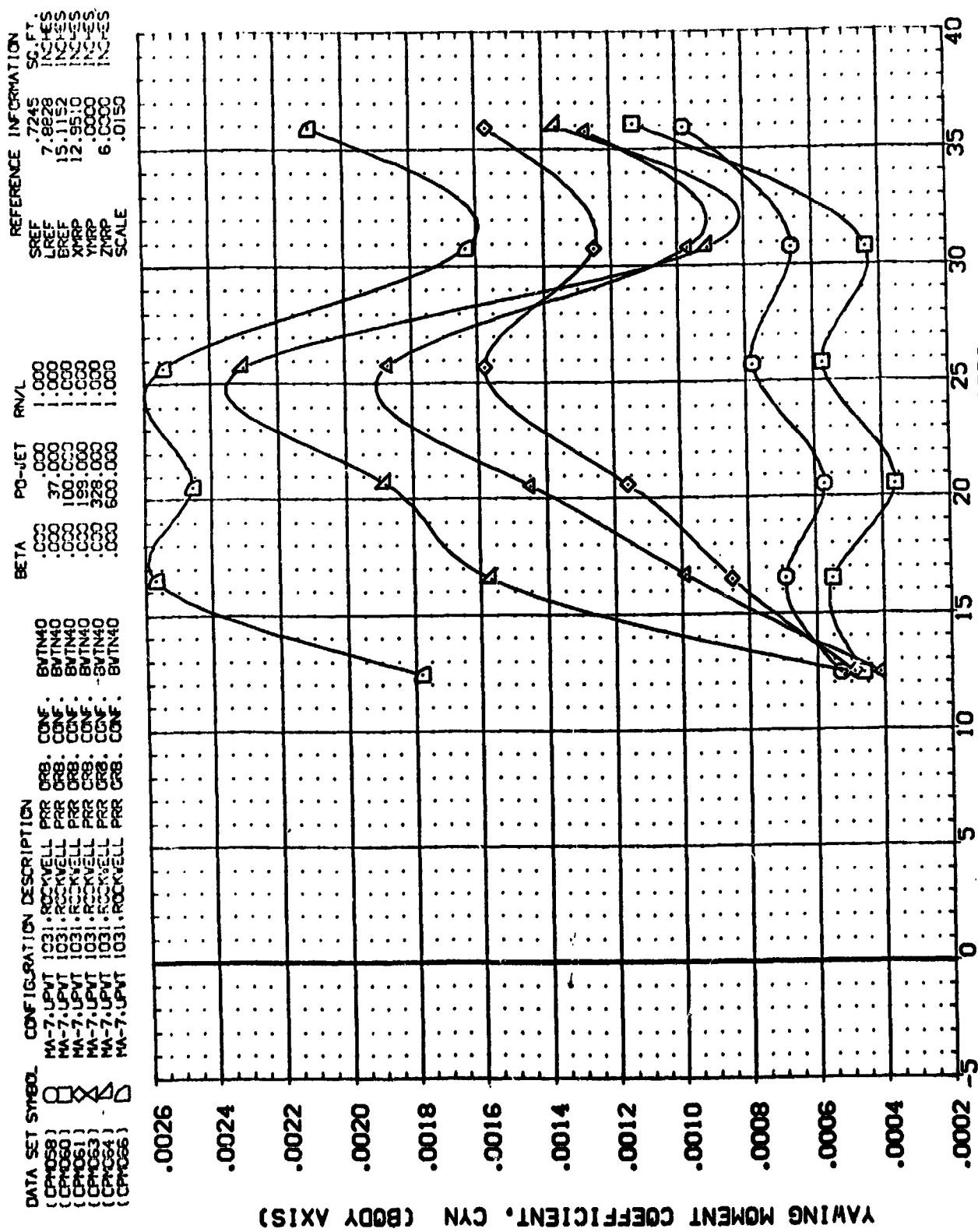
(CH059)	MA-7, UPNT	1031	ROCKWELL	PRR	CONF.	BMTN40
(CH060)	MA-7, UPNT	1031	ROCKWELL	PRR	CONF.	BVTN40
(CH061)	MA-7, UPNT	1031	ROCKWELL	PRR	CONF.	BVTN40
(CH062)	MA-7, UPNT	1031	ROCKWELL	PRR	CONF.	BVTN40
(CH063)	MA-7, UPNT	1031	ROCKWELL	PRR	CONF.	BVTN40
(CH064)	MA-7, UPNT	1031	ROCKWELL	PRR	CONF.	BVTN40
(CH065)	MA-7, UPNT	1031	ROCKWELL	PRR	CONF.	BVTN40

REFERENCE INFORMATION  
 SREF .7245 SO FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XRP 12.9510 INCHES  
 YRP 6.0000 INCHES  
 ZRP 6.0000 INCHES  
 SCALE .0150



Effect of Pitch/Roll Jets Firing Toward Wing (Left-Side Jets Only)  
 (MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP7058) MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN40  
 (CP7060) MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN40  
 (CP7061) MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN40  
 (CP7063) MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN40  
 (CP7064) MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN40  
 (CP7066) MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN40

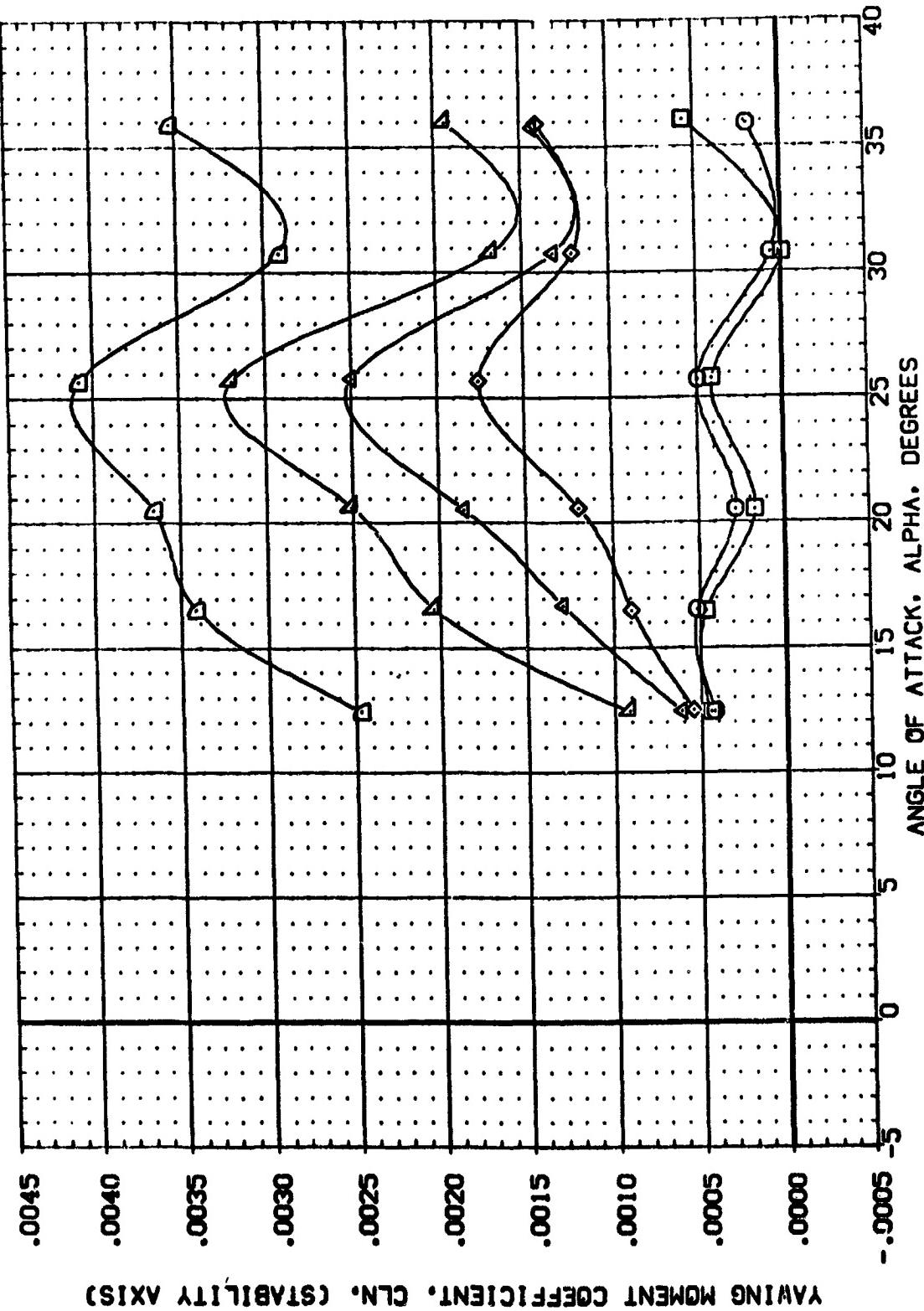


EFFECT OF PITCH/ROLL JETS FIRING TOWARD WING (LEFT-SIDE JETS ONLY)  
 $(\Delta)V_{MACH} = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

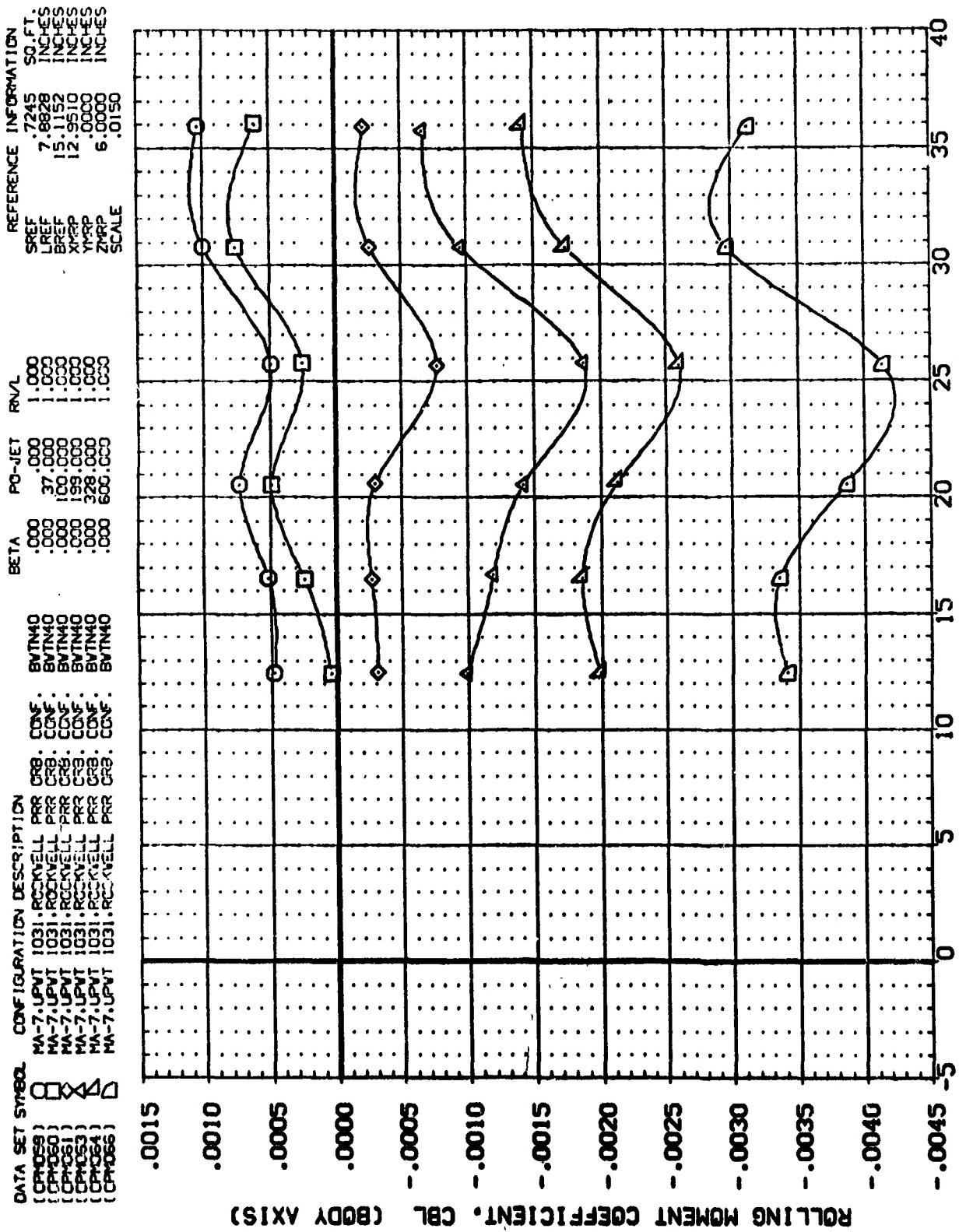
(CPH058)	MA-7, UPNT	1031, ROCKWELL	PER	088.	CDF.
(CPH060)	MA-7, UPNT	1031, ROCKWELL	PER	088.	CDF.
(CPH061)	MA-7, UPNT	1031, ROCKWELL	PER	088.	CDF.
(CPH063)	MA-7, UPNT	1031, ROCKWELL	PER	088.	CDF.
(CPH064)	MA-7, UPNT	1031, ROCKWELL	PER	088.	CDF.
(CPH066)	MA-7, UPNT	1031, ROCKWELL	PER	088.	CDF.

REFERENCE INFORMATION  
 SC.FT.  
 SREF .7245  
 UREF 7.6828  
 INCHES  
 BREF 15.1152  
 INCHES  
 XRP 12.9513  
 INCHES  
 YRP .0000  
 INCHES  
 ZRP 6.0000  
 INCHES  
 SCALE .0150



EFFECT OF PITCH/ROLL JETS FIRING TOWARD WING (LEFT-SIDE JETS ONLY)  
 $\text{MACH} = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP1059) MA-7, UPVT 1031, ROCKWELL PRR CRB, CGF, BVTHC  
 (CP1060) MA-7, UPVT 1031, ROCKWELL PRR CRB, CGF, BVTHC  
 (CP1061) MA-7, UPVT 1031, ROCKWELL PRR CRB, CGF, BVTHC  
 (CP1062) MA-7, UPVT 1031, ROCKWELL PRR CRB, CGF, BVTHC  
 (CP1063) MA-7, UPVT 1031, ROCKWELL PRR CRB, CGF, BVTHC  
 (CP1064) MA-7, UPVT 1031, ROCKWELL PRR CRB, CGF, BVTHC  
 (CP1065) MA-7, UPVT 1031, ROCKWELL PRR CRB, CGF, BVTHC



EFFECT OF PITCH/ROLL JETS FIRING TOWARD WING (LEFT-SIDE JETS ONLY)

( $\Delta$ MACH = 4.00)

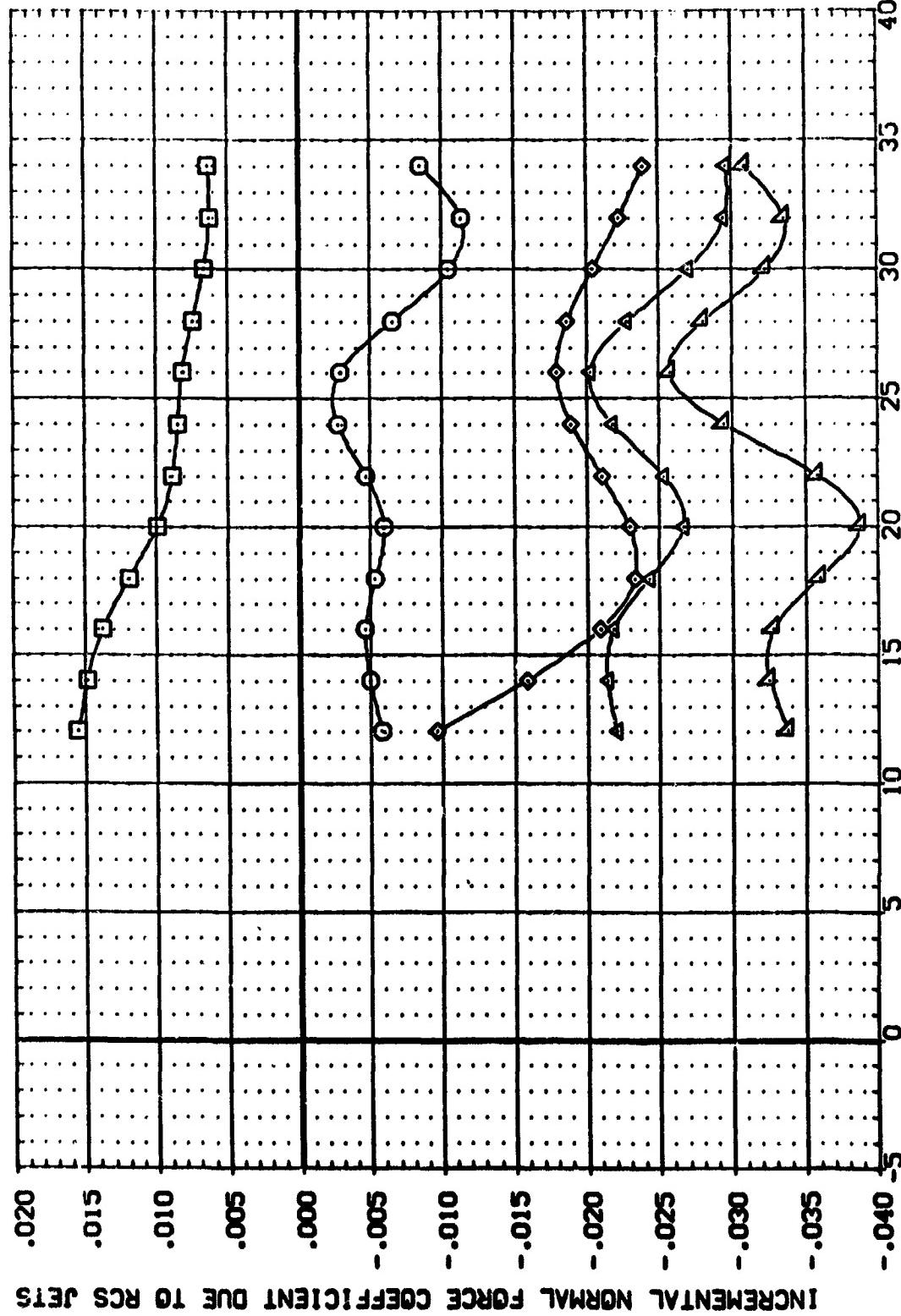
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	REFERENCE INFORMATION
(C) (C)	MA-7, UPVT 1031, ROCKWELL PRR CONF. BVTM40	SREF .7245 IN.FT.
(O) (O)	MA-7, UPVT 1031, PGM NELL PRR CONF. BVTM40	LREF 7.8828 IN.FT.
(X) (X)	MA-7, UPVT 1031, PGM NELL PRR CONF. BVTM40	BREF 15.1152 IN.FT.
(D) (D)	MA-7, UPVT 1031, PGM NELL PRR CONF. BVTM40	XMRP 12.9510 IN.FT.
(+) (+)	MA-7, UPVT 1031, PGM NELL PRR CONF. BVTM40	YMRP 0.0000 INCHES
(+) (+)	MA-7, UPVT 1031, PGM NELL PRR CONF. BVTM40	ZMRP 6.0000 INCHES
(S) (S)	MA-7, UPVT 1031, PGM NELL PRR CONF. BVTM40	SCALE .0150



EFFECT OF PITCH/ROLL JETS FIRING TOWARD WING (LEFT-SIDE JETS ONLY)  
 APPROACH = 4.00

DATA SET	SETUP	CONFIGURATION	DESCRIPTION	BETA	DPO-J	R/V/L
(AP050)	□	NA-7. UPVT	031. ROCKWELL PRR ORB. CONF.	.000	.000	1.000
(AP051)	□	NA-7. UPVT	031. ROCKWELL PRR ORB. CONF.	.000	.000	1.000
(AP053)	△	NA-7. UPVT	031. ROCKWELL PRR ORB. CONF.	.000	.000	1.000
(AP054)	△	NA-7. UPVT	031. ROCKWELL PRR ORB. CONF.	.000	.000	1.000
(AP056)	△	NA-7. UPVT	031. ROCKWELL PRR ORB. CONF.	.000	.000	1.000

REFERENCE INFORMATION  
 SREF .7245 SO. FT.  
 LREF 7.8228 INCHES  
 BREF 15.1152 INCHES  
 XRP 12.9510 INCHES  
 YRP 12.0000 INCHES  
 ZRP 6.0000 INCHES  
 SCALE .0150



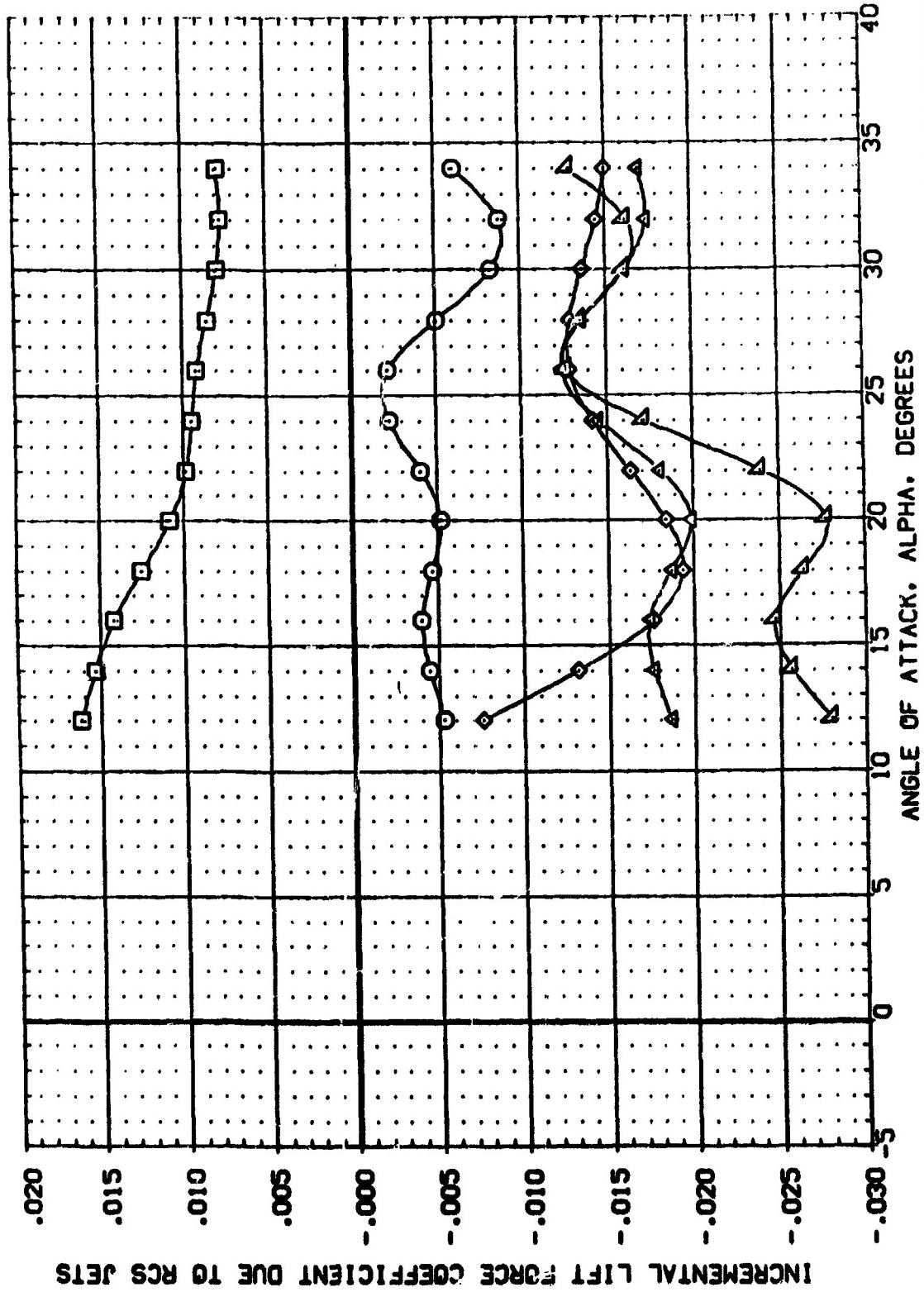
INCREMENTAL NORMAL FORCE COEFFICIENT DUE TO RCS JETS

INTERFERENCE EFFECTS OF LEFT-SIDE PITCH/ROLL JETS FIRING TOWARD WING (INCREMENTS)  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APD01)	□	MA-7, UPNT 1031, ROCKWELL PRR. CONF.
(APD02)	○	MA-7, UPNT 1031, ROCKWELL PRR. CONF.
(APD03)	△	MA-7, UPNT 1031, ROCKWELL PRR. CONF.
(APD04)	×	MA-7, UPNT 1031, ROCKWELL PRR. CONF.
(APD05)	◆	MA-7, UPNT 1031, ROCKWELL PRR. CONF.

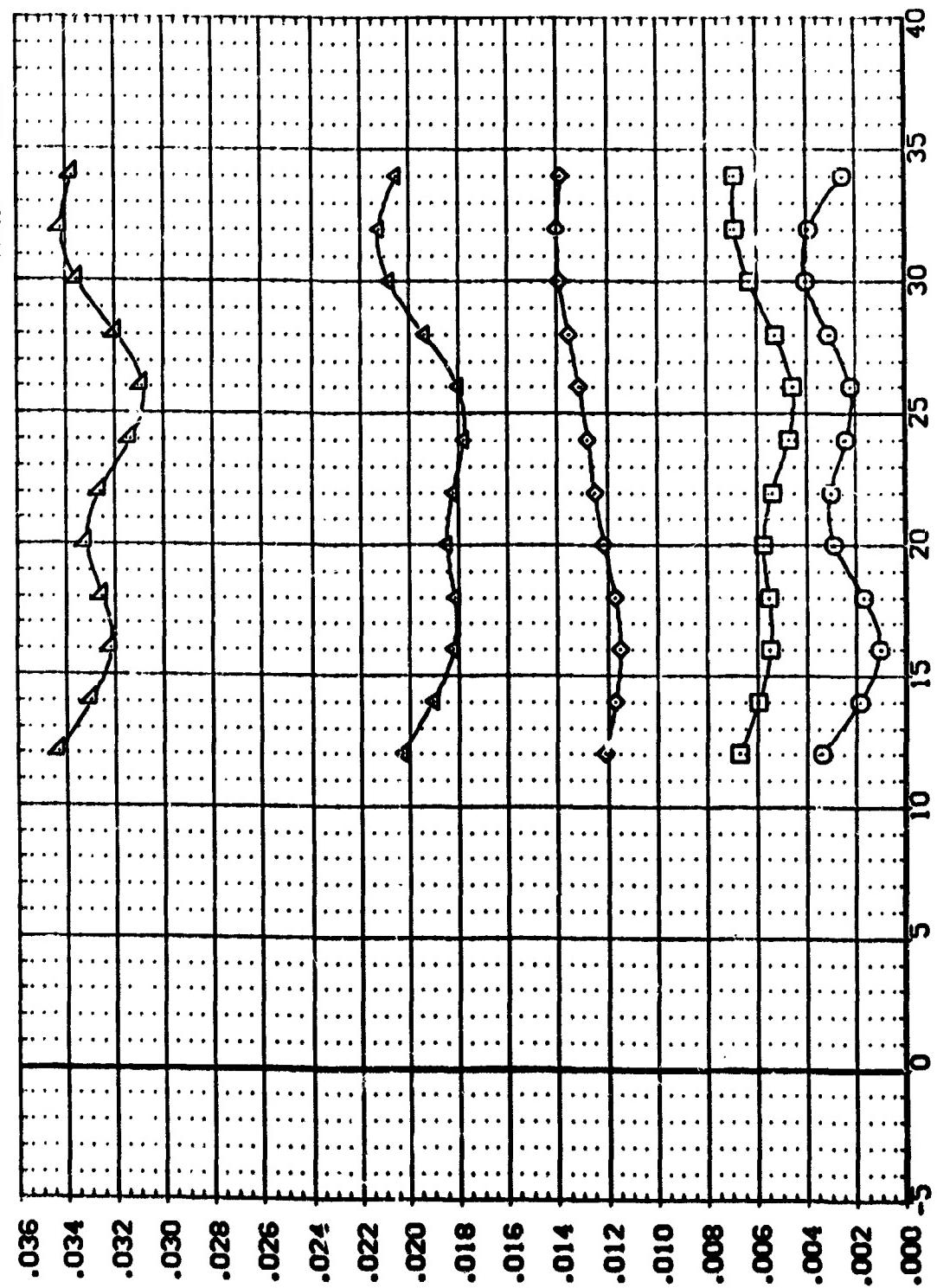
REFERENCE INFORMATION  
 SREF .7245  
 LREF 7.8328  
 BREF 15.1152  
 XHMP 12.9510  
 YHMP 6.0000  
 ZHMP .0150  
 SCALE



INTERFERENCE EFFECTS OF LEFT-SIDE PITCH/ROLL JETS FIRING TOWARD WINGS (INCREMENTS)  
 (ATTACH = 4.00)  
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DATA SET NAME: CONFIGURATION DESCRIPTION  
 LAPD01 MA-7, UPVT 1931, ROCKWELL PRR CDF, CDF  
 LAPD02 MA-7, UPVT 1931, ROCKWELL PRR CDF, CDF  
 LAPD03 MA-7, UPVT 1931, ROCKWELL PRR CDF, CDF  
 LAPD04 MA-7, UPVT 1931, ROCKWELL PRR CDF, CDF  
 LAPD05 MA-7, UPVT 1931, ROCKWELL PRR CDF, CDF

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8329 INCHES  
 BREF 15.1152 INCHES  
 X<sub>CP</sub> 12.6510 INCHES  
 Y<sub>CP</sub> 6.0000 INCHES  
 Z<sub>CP</sub> 6.0150 INCHES



INCREMENTAL PITCHING MOMENT COEFFICIENT DUE TO RCS JETS

INTERFERENCE EFFECTS OF LEFT-SIDE PITCH/ROLL JETS FIRING TOWARD WING (INCREMENTS)  
 (A)MACH = 4.00

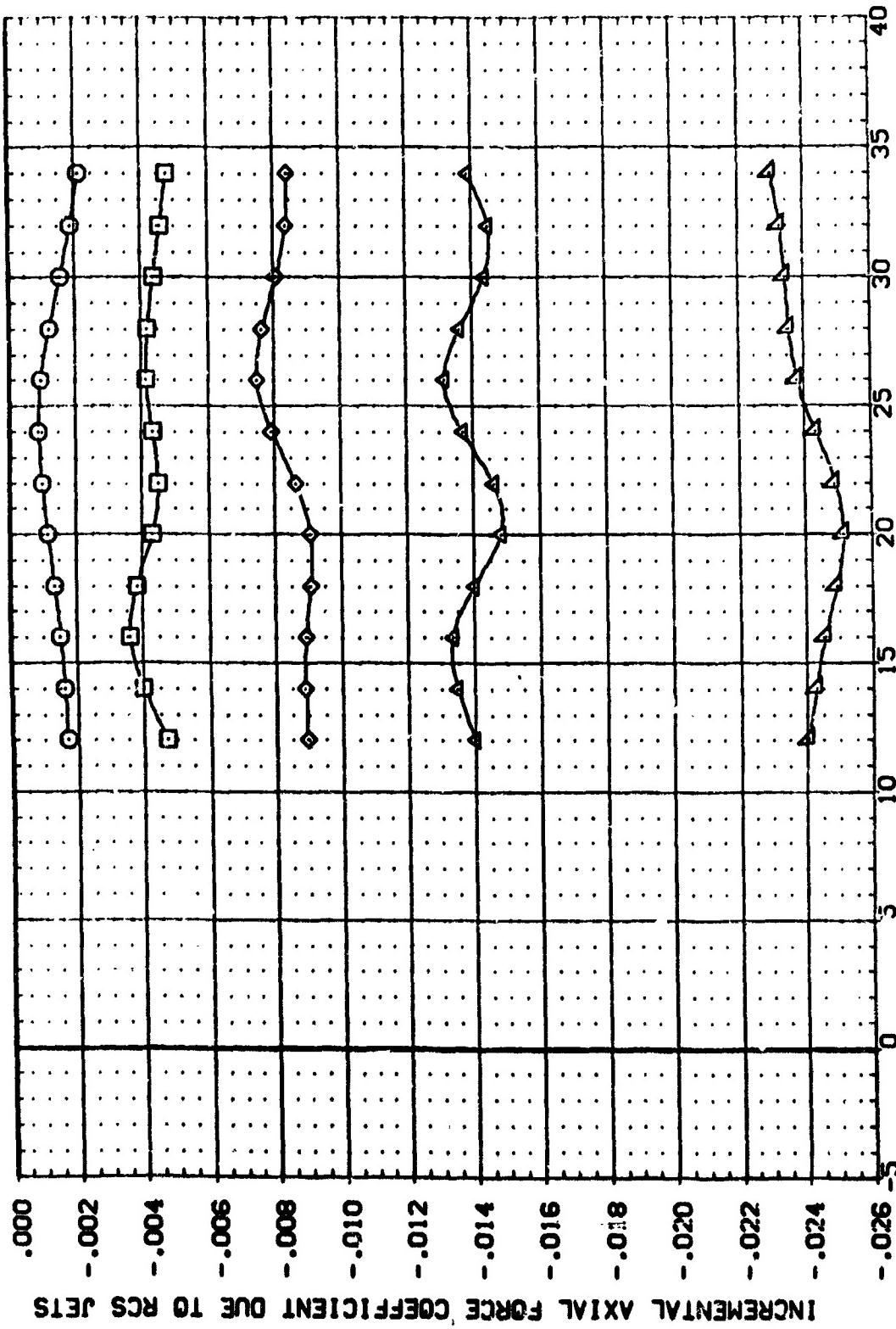
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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(AP050)	MA-7, UPNT	1031, RECKELL	P2R	DRB.	CONF:	BFTN40
(AP051)	MA-7, UPNT	1031, RECKELL	P2R	CRR	CONF:	BFTN40
(AP123)	MA-7, UPNT	1031, RECKELL	P2R	CRR	CONF:	BFTN40
(AP124)	MA-7, UPNT	1031, RECKELL	P2R	CRR	CONF:	BFTN40
(AP055)	MA-7, UPNT	1031, RECKELL	P2R	CRR	CONF:	BFTN40

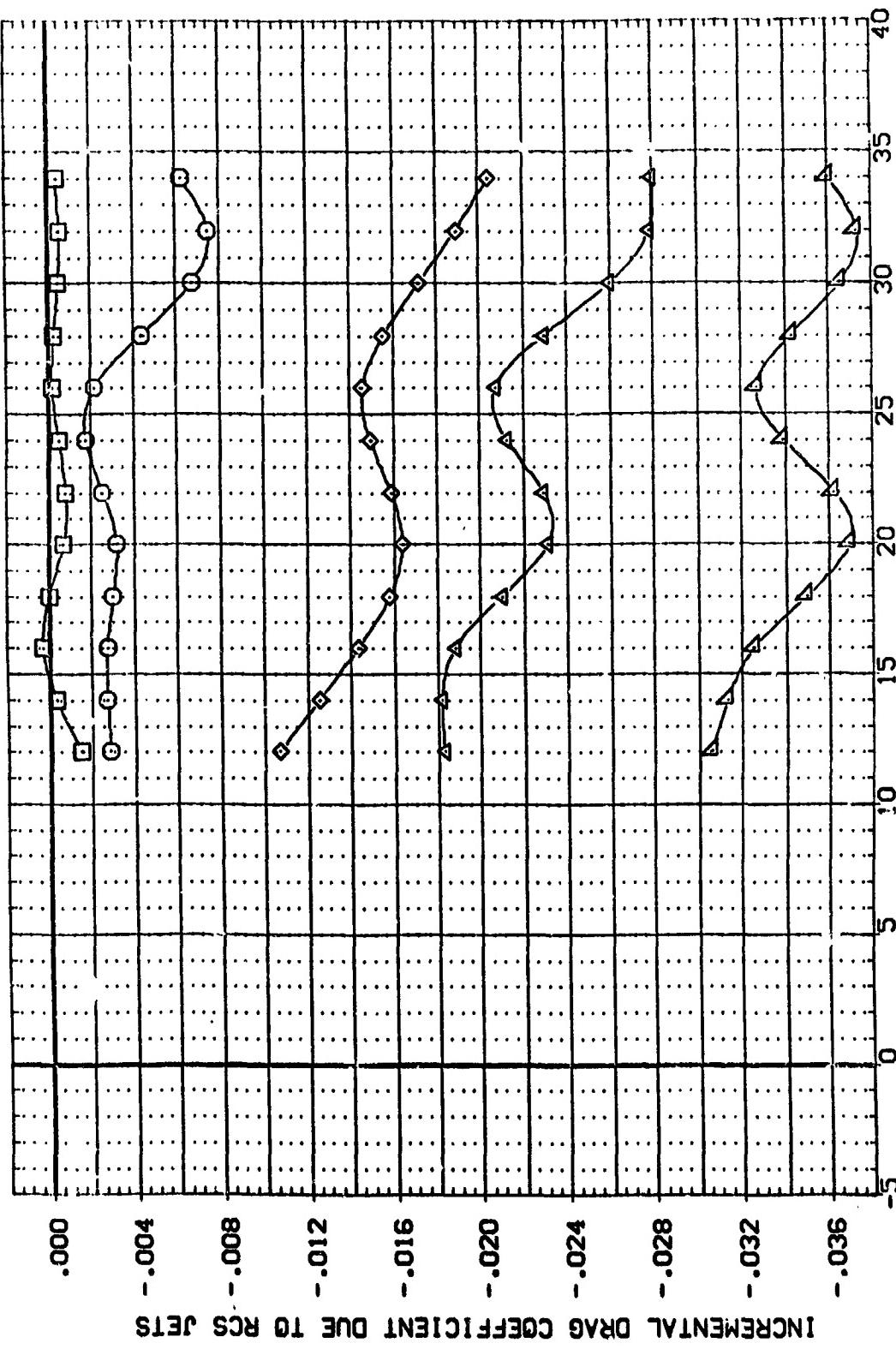
REFERENCE INFORMATION

SREF	.7245	SQ. FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XHREF	12.9510	INCHES
YHREF	6.0000	INCHES
ZHREF	.0150	
SCALE		



INTERFERENCE EFFECTS OF LEFT-SIDE PITCH/ROLL JETS FIRING TOWARD WING (INCREMENTS)  
 $(\text{MACH} = .4.00)$

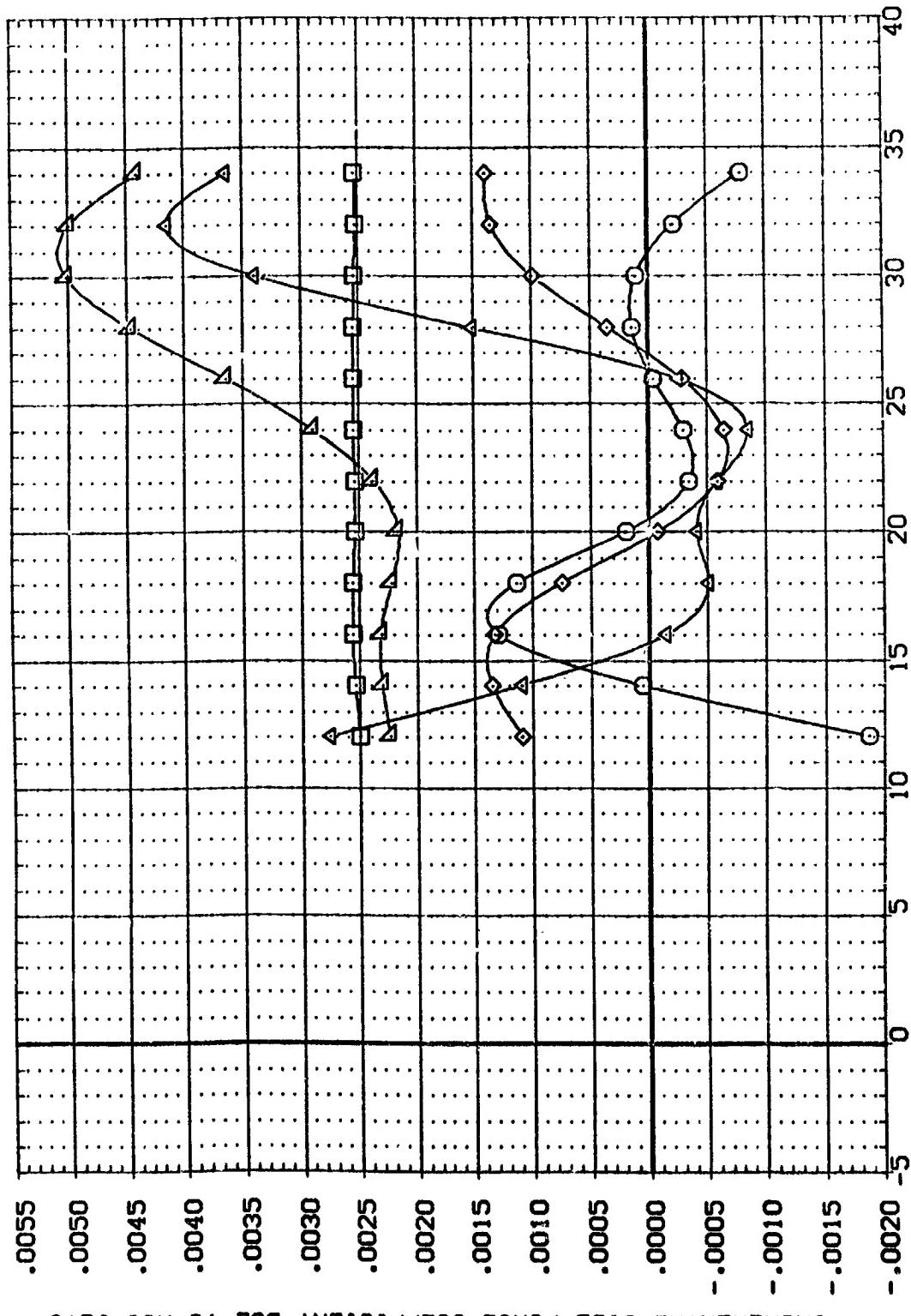
DATA SET SYMBOLS      CONFIGURATION DESCRIPTION      REFERENCE INFORMATION  
 (APM060)      MA-7, UPNT      1031, ROCKWELL PRR GRB, CONF: BWTN40      SREF: .7245 SQ.FT.  
 (APM061)      MA-7, UPNT      1031, ROCKWELL PRR GRB, CONF: BWTN40      LREF: .6828 INCHES  
 (APM063)      MA-7, UPNT      1031, ROCKWELL PRR GRB, CONF: BWTN40      BREF: .152 INCHES  
 (APM064)      MA-7, UPNT      1031, ROCKWELL PRR GRB, CONF: BWTN40      XREF: .3610 INCHES  
 (APM036)      MA-7, UPNT      1031, ROCKWELL PRR GRB, CONF: BWTN40      YREF: .0000 INCHES  
 (APM037)      MA-7, UPNT      1031, ROCKWELL PRR GRB, CONF: BWTN40      ZREF: .0000 INCHES



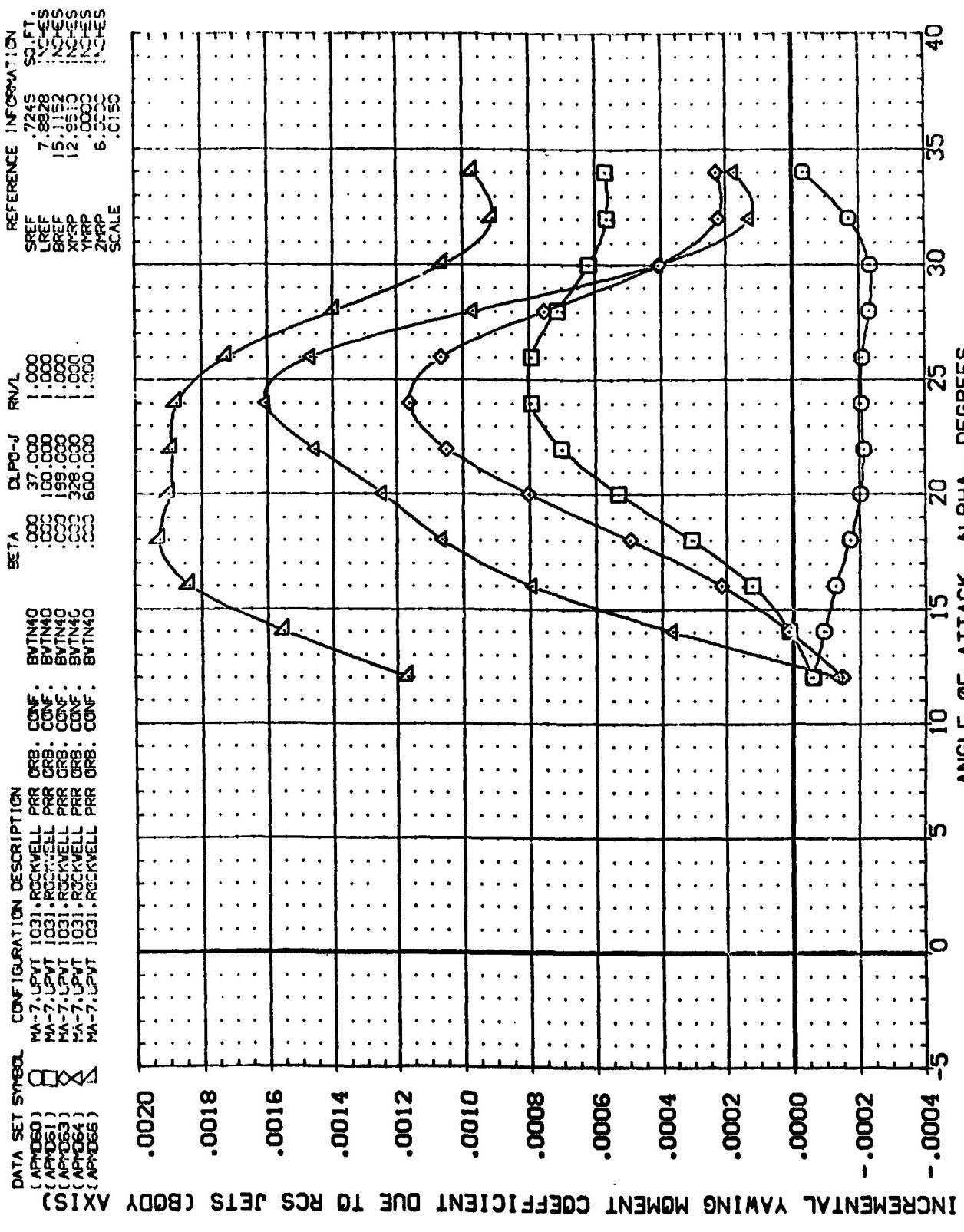
INTERFERENCE EFFECTS OF LEFT-SIDE PITCH/ROLL JETS FIRING TOWARD WING (INCREMENTS)  
 (MACH = 4.00)      PAGE 225

DATA SET SYMBOL CONFIGURATION DESCRIPTION ORB. CONF. BTN40 DLPO-J RN/L  
 (APD60) MA-7. UPVT 1031. ROCKWELL PRR CRB. CONF. 6/7TN40 .000 37.000 1.000  
 (APD61) MA-7. UPVT 1031. ROCKWELL PRR CRB. CONF. 6/7TN40 .000 100.000 1.000  
 (APD63) MA-7. UPVT 1031. ROCKWELL PRR CRB. CONF. 6/7TN40 .000 199.000 1.000  
 (APD64) MA-7. UPVT 1031. ROCKWELL PRR CRB. CONF. 6/7TN40 .000 328.000 1.000  
 (APD56) MA-7. UPVT 1031. ROCKWELL PRR CRB. CONF. 6/7TN40 .000 600.000 1.000

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP .0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150



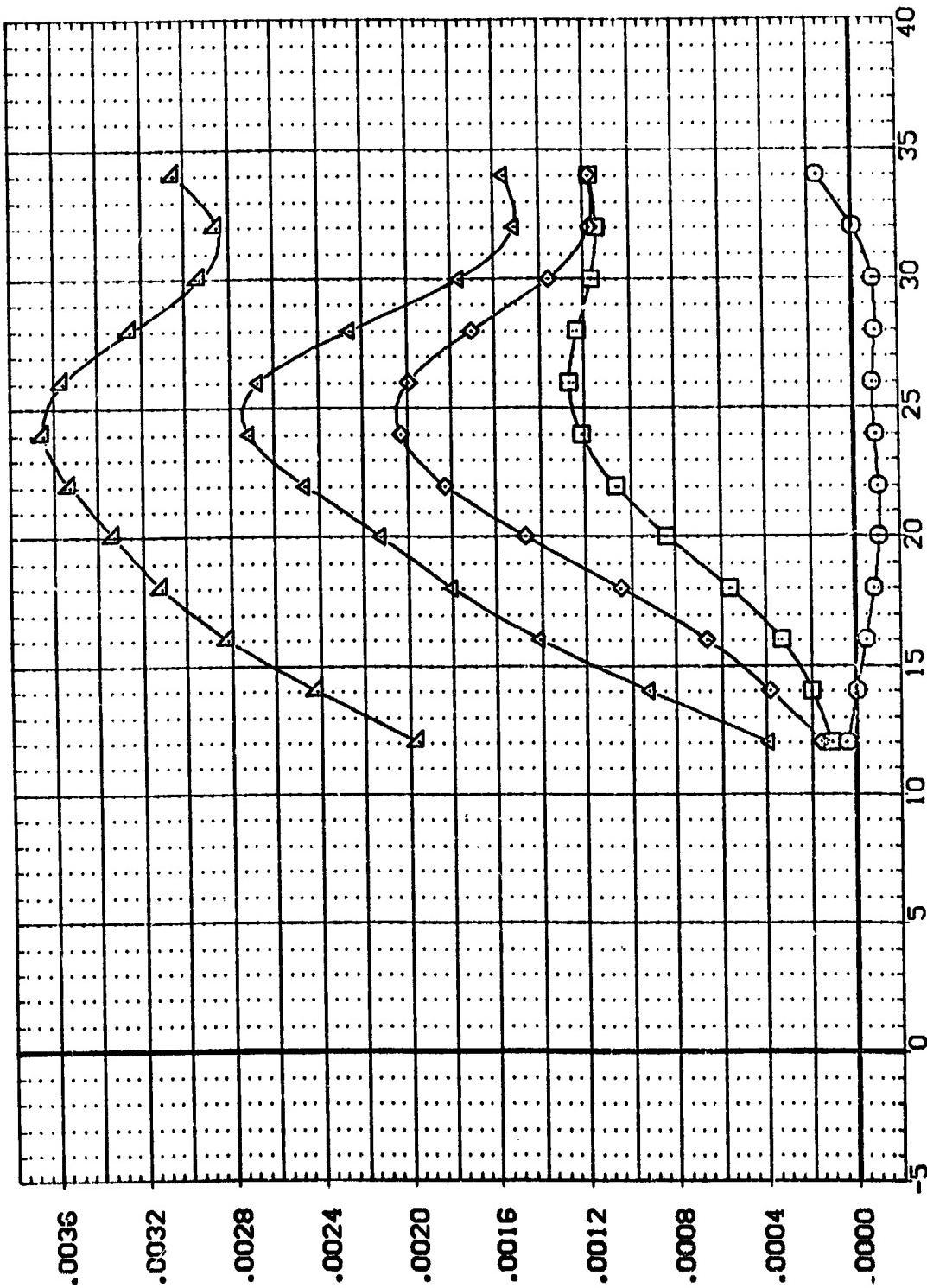
INTERFERENCE EFFECTS OF LEFT-SIDE PITCH/ROLL JETS FIRING TOWARD WINGS (INCREMENTS)  
 $(MACH = 4.00)$



INTERFERENCE EFFECTS OF LEFT-SIDE PITCH/ROLL JETS FIRING TOWARD WINGS( INCREMENTS)  
 $(\Delta MACH = 4.00)$

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DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DLP0-J	RNL	REFERENCE INFORMATION
(APD60)	MA-7: UPVT 1031: ROCKWELL PRR CRB: CONF: BVTN40	.000	.37,000	.000	SREF .7245 SQ.FT.
(APD61)	MA-7: UPVT 1031: ROCKWELL PRR CRB: CONF: BVTN40	.000	.100,000	.000	LREF 7.8828 INCHES
(APD62)	MA-7: UPVT 1031: ROCKWELL PRR CRB: CONF: BVTN40	.000	.199,000	.000	ZREF 15.1152 INCHES
(APD63)	MA-7: UPVT 1031: ROCKWELL PRR CRB: CONF: BVTN40	.000	.328,000	.000	XREF 12.9510 INCHES
(APD64)	MA-7: CEXT 1031: ROCKWELL PRR CRB: CONF: BVTN40	.000	.600,000	.000	YREF .0000 INCHES
(APD65)	MA-7: UPVT 1031: ROCKWELL PRR CRB: CONF: BVTN40	.000	.600,000	.000	ZREF .0000 INCHES



INCREMNETAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (STABILITY AXIS)  
 $(\text{ANGLE OF ATTACK}) = 4.00$

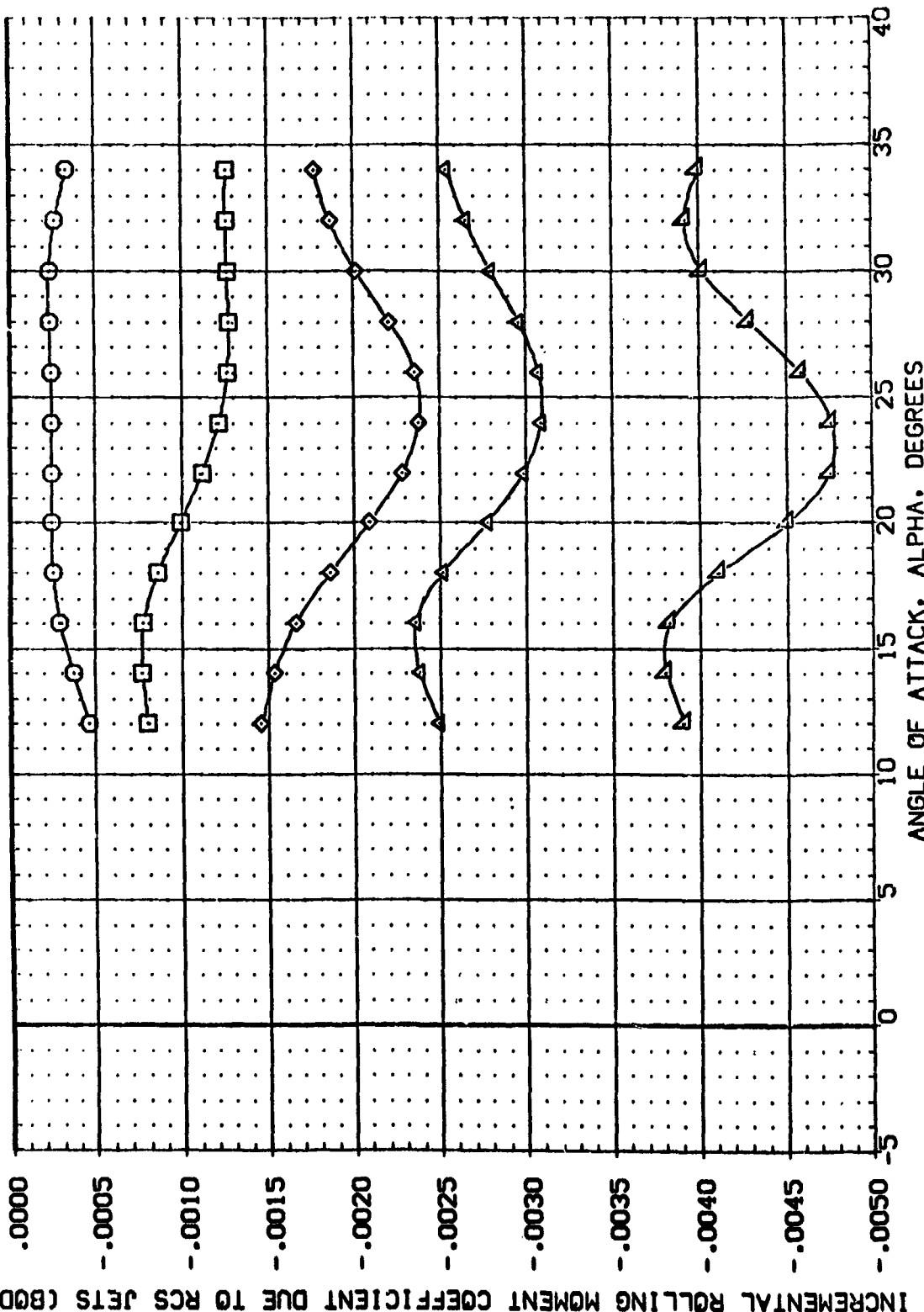
INTERFERENCE EFFECTS OF LEFT-SIDE PITCH/ROLL JETS FIRING TOWARD WING (INCREMENTS)

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APP050)	MA-7. UPWT	1031. ROCKWELL PRR	GRB. CONF.	BUTN40
(APP061)	MA-7. UPWT	1031. ROCKWELL PRR	GRB. CONF.	BUTN40
(APP063)	MA-7. UPWT	1031. ROCKWELL PRR	GRB. CONF.	BUTN40
(APP064)	MA-7. UPWT	1031. ROCKWELL PRR	GRB. CONF.	BUTN40
(APP066)	MA-7. UPWT	1031. ROCKWELL PRR	GRB. CONF.	BUTN40

REFERENCE INFORMATION

SREF	.7245	SC. FCS
LREF	7.8828	NOSES
BREF	15.1152	NOSES
XRP	12.9510	NOSES
ZRP	6.0000	NOSES
SCALE	.0150	

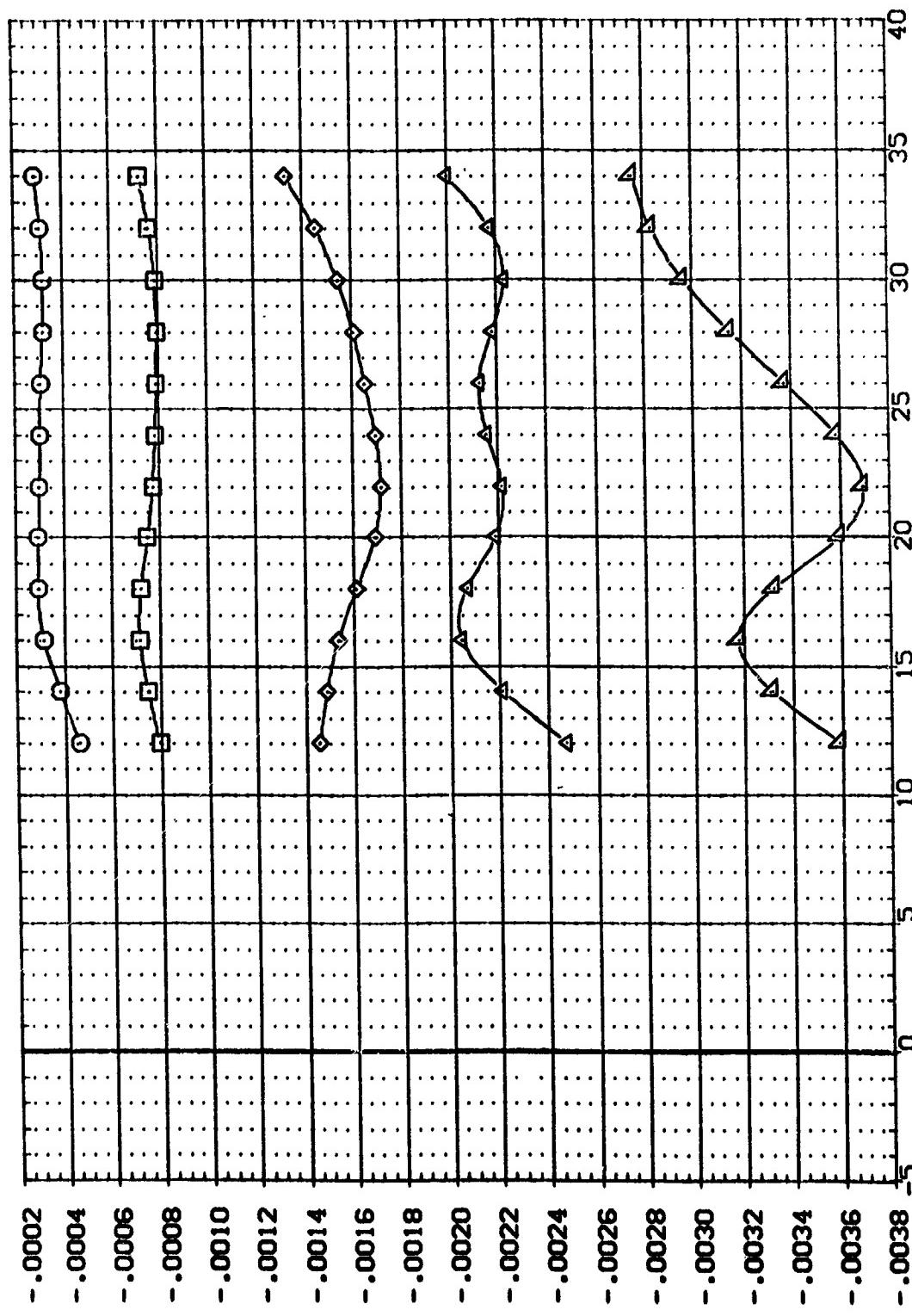


INTERFERENCE EFFECTS OF LEFT-SIDE PITCH/ROLL JETS FIRING TOWARD WING( INCREMENTS )

(A)MACH = 4.00

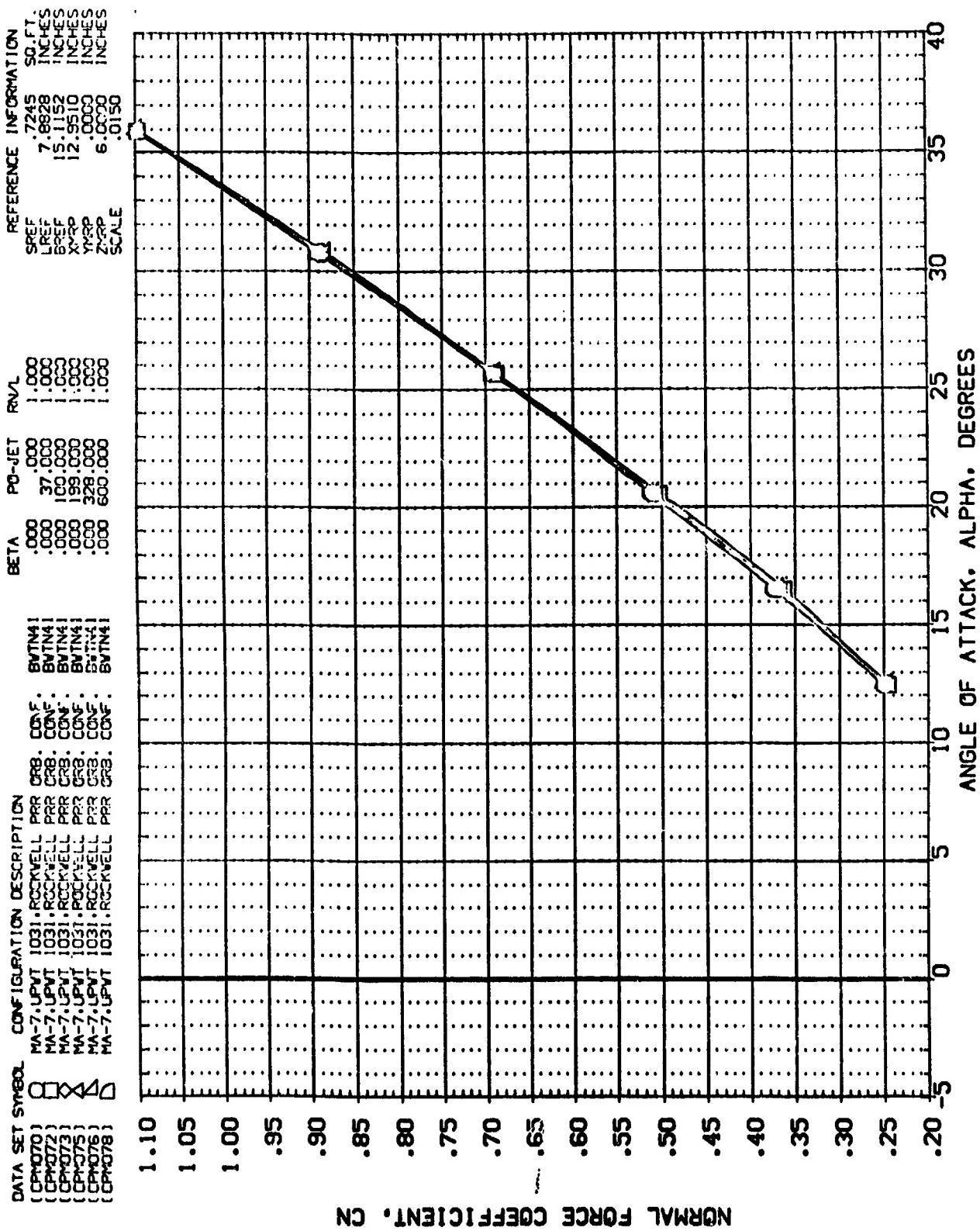
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DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	REFERENCE INFORMATION
(APD60)	MA-7-UPVT	1C31 RECHNELL PRR CGB. CCE.	BVTNAO
(APD61)	MA-7-UPVT	1C31 RECHNELL PRR CGB. CCE.	BVTNAO
(APD63)	MA-7-UPVT	1C31 RECHNELL PRR CGB. CCE.	BVTNAO
(APD64)	MA-7-UPVT	1C31 RECHNELL PRR CGB. CCE.	BVTNAO
(APD65)	MA-7-UPVT	1C31 RECHNELL PRR CGB. CCE.	BVTNAO
			BREF
			LREF
			BREF
			YTRP
			ZTRP
			SCAF



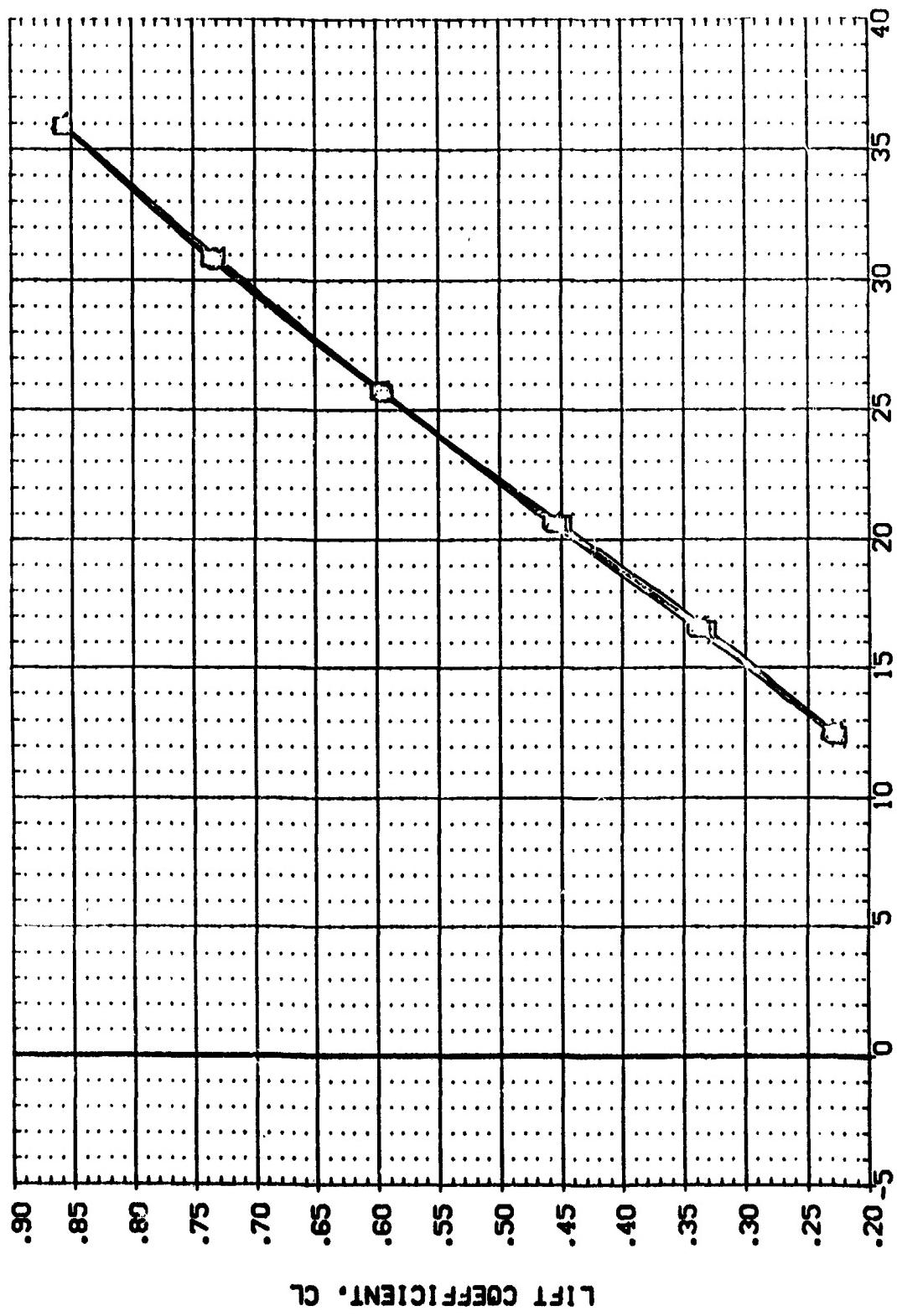
INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS STABILITY AXES

INTERFERENCE EFFECTS OF LEFT-SIDE PITCH/ROLL JETS FIRING TOWARD WING( INCREMENTS)  
[A]MACH = 4.00 PAGE 230

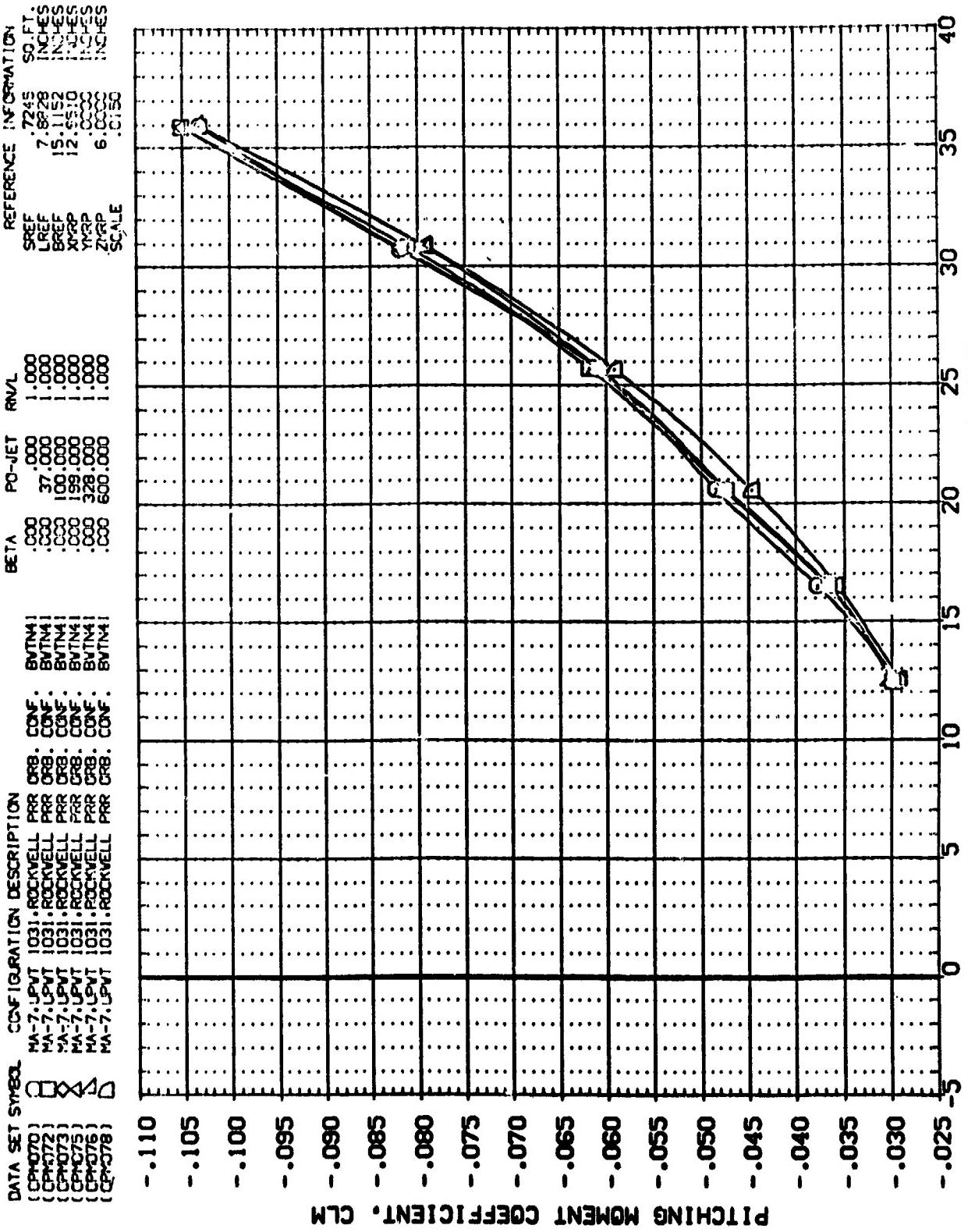


EFFECT OF PITCH/ROLL JETS FIRING TOWARD VERT. TAIL (RIGHT-SIDE JETS ONLY)  
 $(\text{AJMACH} = 4.00)$

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	P0-JET	RVL	REFERENCE INFORMATION
(CPH070)	MA-7, UPIT	1031, ROCKWELL	PRR	.000	1.000 SREF
(CPH072)	MA-7, UPIT	1031, ROCKWELL	PRR	.000	1.000 LREF
(CPH073)	MA-7, UPIT	1031, ROCKWELL	PRR	.000	1.000 BREF
(CPH075)	MA-7, UPIT	1031, ROCKWELL	PRR	.000	1.000 XTRP
(CPH076)	MA-7, UPIT	1031, ROCKWELL	PRR	.000	1.000 YTRP
(CPH078)	MA-7, UPIT	1031, ROCKWELL	PRR	.000	1.000 ZTRP
					.0153 SCALE



EFFECT OF PITCH/ROLL JETS FIRING TOWARD VERT. TAIL (RIGHT-SIDE JETS ONLY)  
 $(\text{MACH} = 4.00)$



EFFECT OF PITCH/ROLL JETS FIRING TOWARD VERT. TAIL (RIGHT-SIDE JETS ONLY)

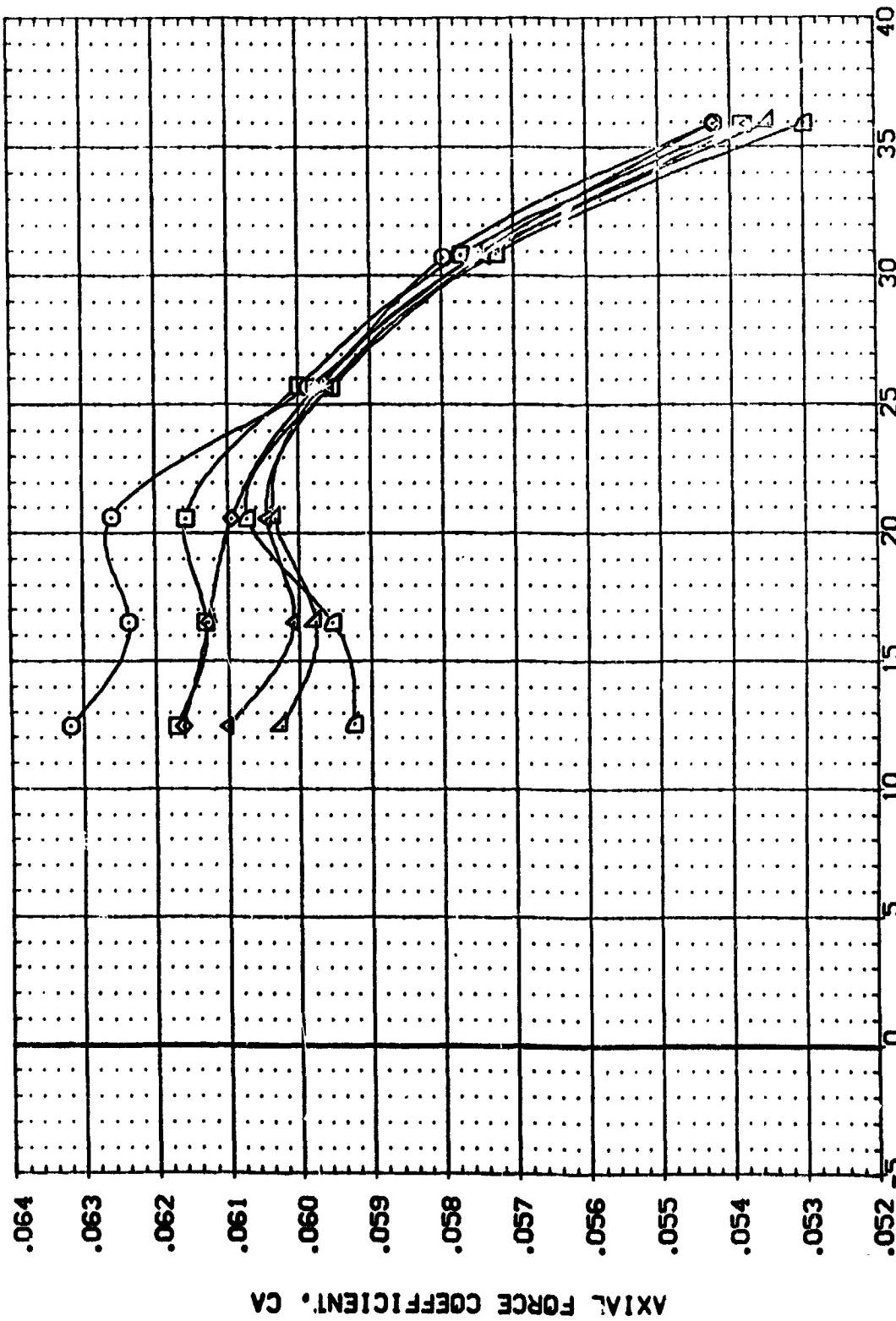
( $\Delta$ MACH = 4.00

PAGE 233

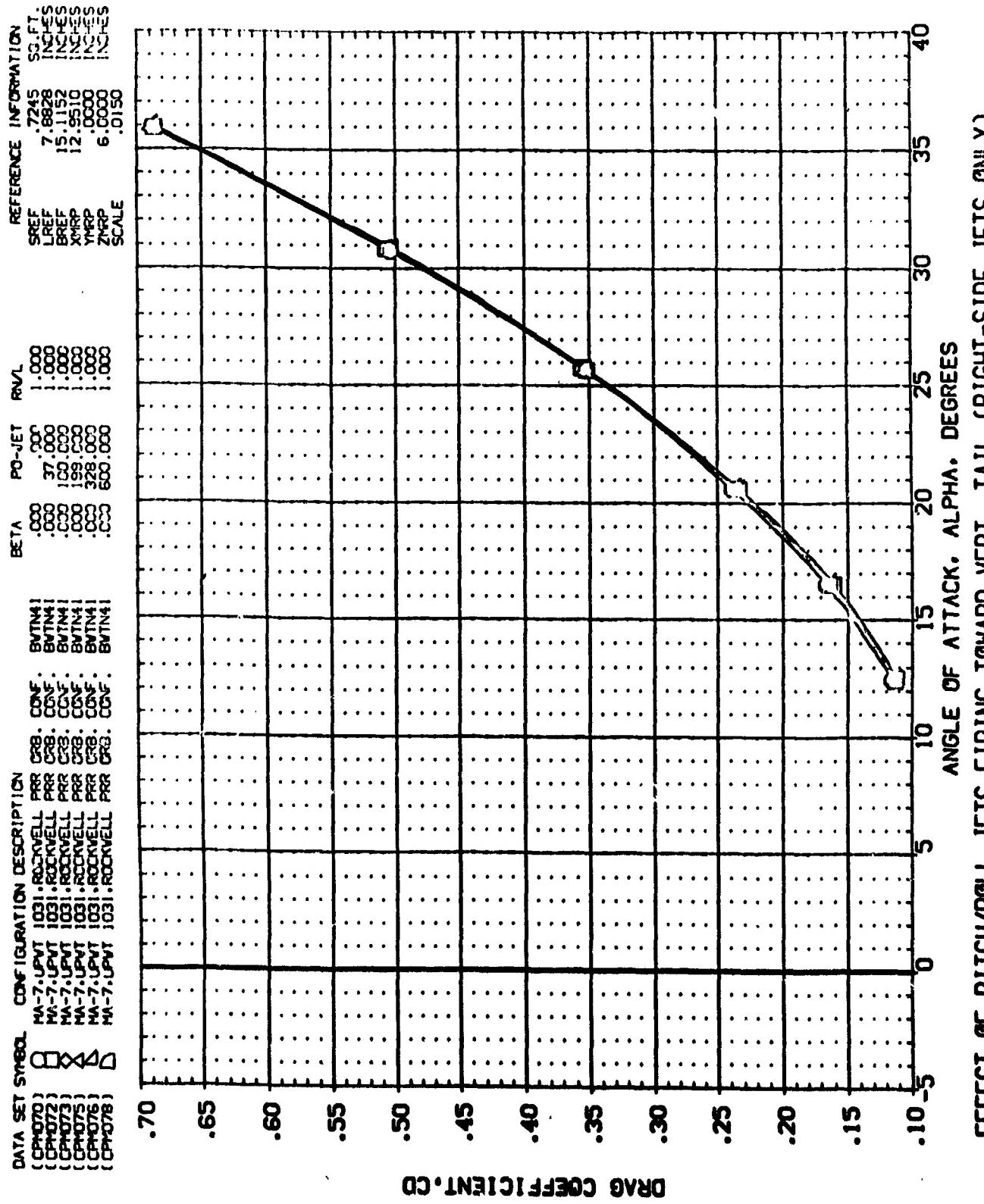
DATA SET SOURCE CONFIGURATION DESCRIPTION

CPHOTOC	MA-7, UPVT	1031, ROCKWELL	PRR	CDF.	BUTN4
CPHOT72	MA-7, UPVT	1031, ROCKWELL	PRR	CDF.	BUTN4
CPHOT73	MA-7, UPVT	1031, ROCKWELL	PRR	CDF.	BUTN4
CPHOT75	MA-7, UPVT	1031, ROCKWELL	PRR	CDF.	BUTN4
CPHOT76	MA-7, UPVT	1031, ROCKWELL	PRR	CDF.	BUTN4
CPHOT78	MA-7, UPVT	1031, ROCKWELL	PRR	CDF.	BUTN4

REFERENCE INFORMATION  
 SREF SO. FT.  
 LREF 7.7245 INCHES  
 BREF 7.8828 INCHES  
 XRP 15.1152 INCHES  
 YRP 12.9510 INCHES  
 ZRP .0000 INCHES  
 SCALE 6.0000 INCHES  
 .0150

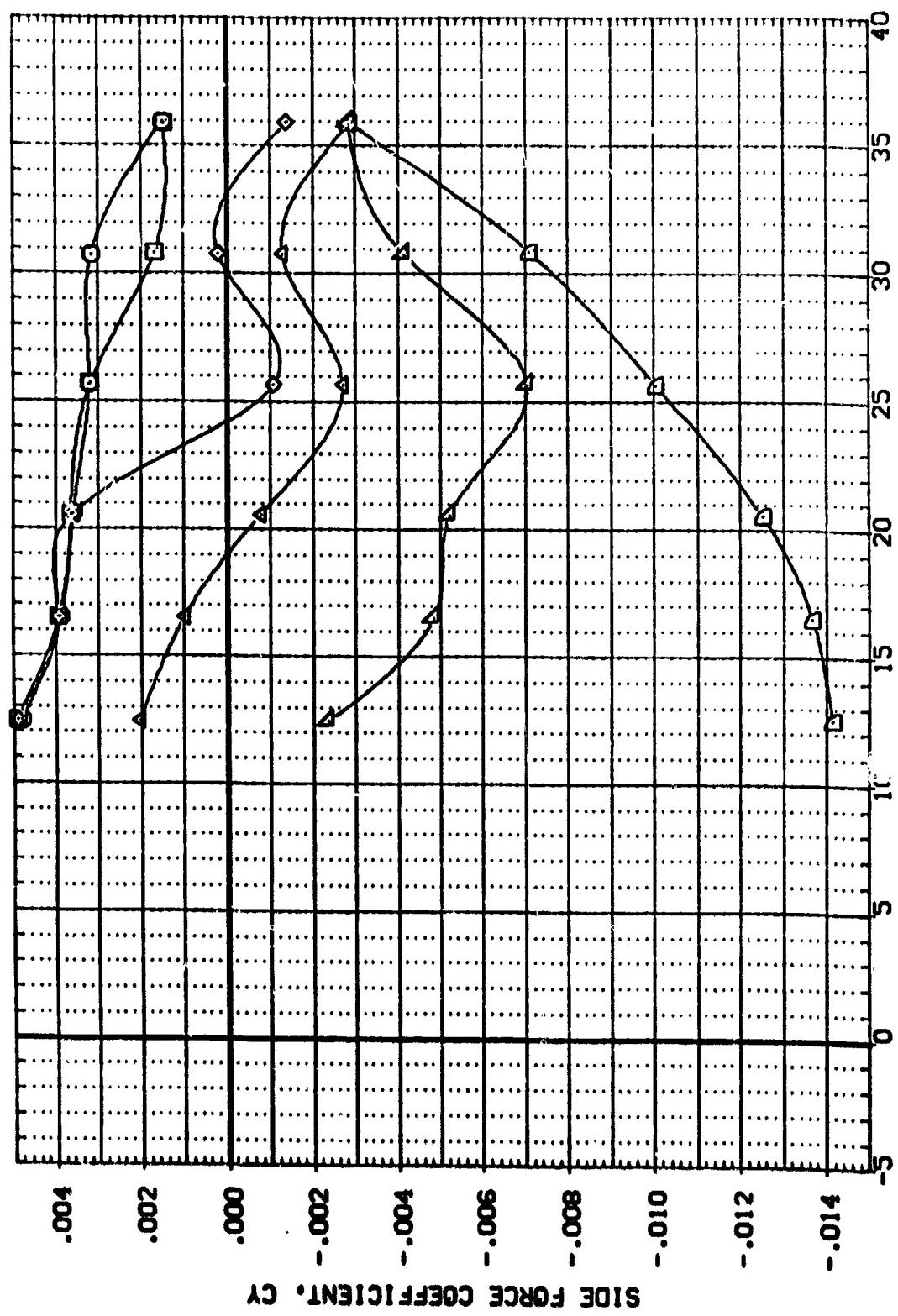


EFFECT OF PITCH/ROLL JETS FIRING TOWARD VERT. TAIL (RIGHT-SIDE JETS ONLY)  
 (MACH = 4.00)



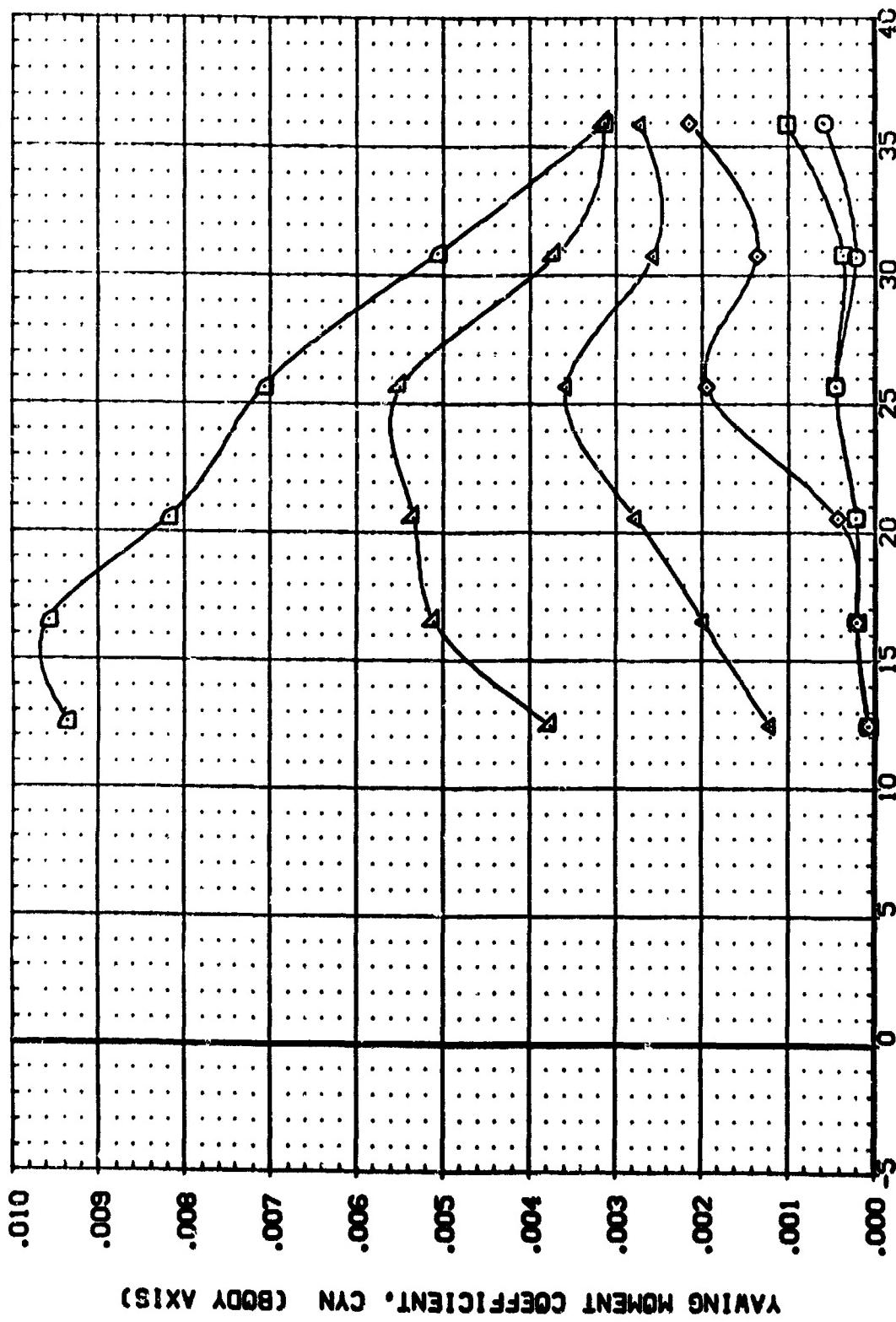
EFFECT OF PITCH/ROLL JETS FIRING TOWARD VERT. TAIL (RIGHT-SIDE JETS ONLY)  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (1)P(M0) MA-7, UPVT 1031, ROCKWELL PRR GRB. CONF. BVTN41  
 (2)P(D2) MA-7, UPVT 1031, ROCKWELL PRR GRB. CONF. BVTN41  
 (3)P(D3) MA-7, UPVT 1031, ROCKWELL PRR GRB. CONF. BVTN41  
 (4)P(D4) MA-7, UPVT 1031, ROCKWELL PRR GRB. CONF. BVTN41  
 (5)P(D5) MA-7, UPVT 1031, ROCKWELL PRR GRB. CONF. BVTN41  
 (6)P(D6) MA-7, UPVT 1031, ROCKWELL PRR GRB. CONF. BVTN41



EFFECT OF PITCH/ROLL JETS FIRING TOWARD VERT. TAIL (RIGHT-SIDE JETS ONLY)  
 (MACH = 4.00)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	P0-JET	RNL.	REFERENCE INFORMATION
(DP070)	MA-7. UPVT	.000	.000	1.000	SREF .7245 SD.FT.
(DP072)	MA-7. UPVT	.000	.37000	1.000	LREF .8328 INCHES
(DP073)	MA-7. UPVT	.000	.10000	1.000	BREF 15.1152 INCHES
(DP075)	MA-7. UPVT	.000	.19600	1.000	XREF 12.5510 INCHES
(DP076)	MA-7. UPVT	.000	.32800	1.000	YREF .0000 INCHES
(DP078)	MA-7. UPVT	.000	.60000	1.000	ZREF 6.0000 INCHES
					SCALE .0150

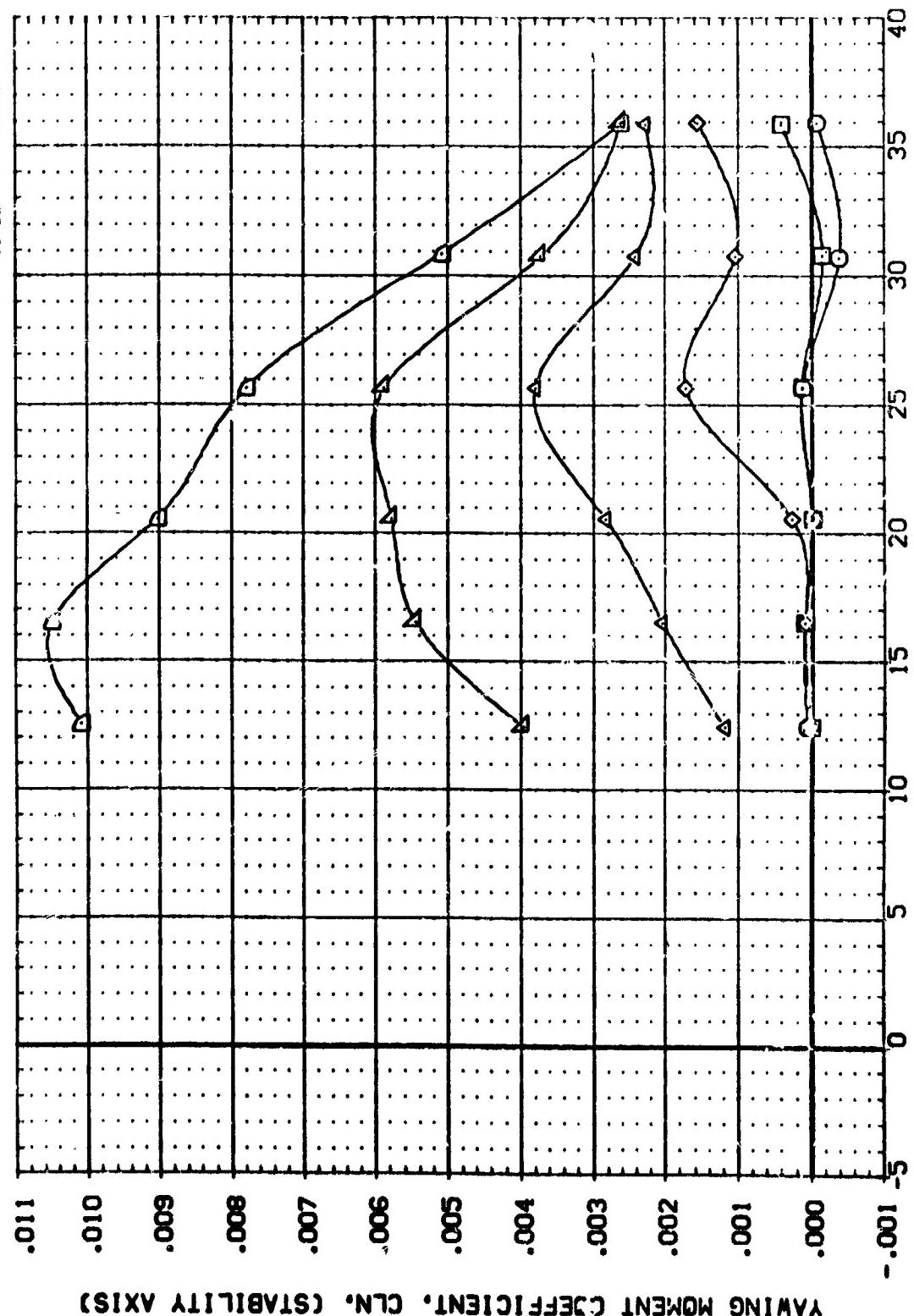


EFFECT OF PITCH/ROLL JETS FIRING TOWARD VERT. TAIL (RIGHT-SIDE JETS ONLY)  
(MACH = 4.00)

DATA SET SNAME CONFIGURATION DESCRIPTION

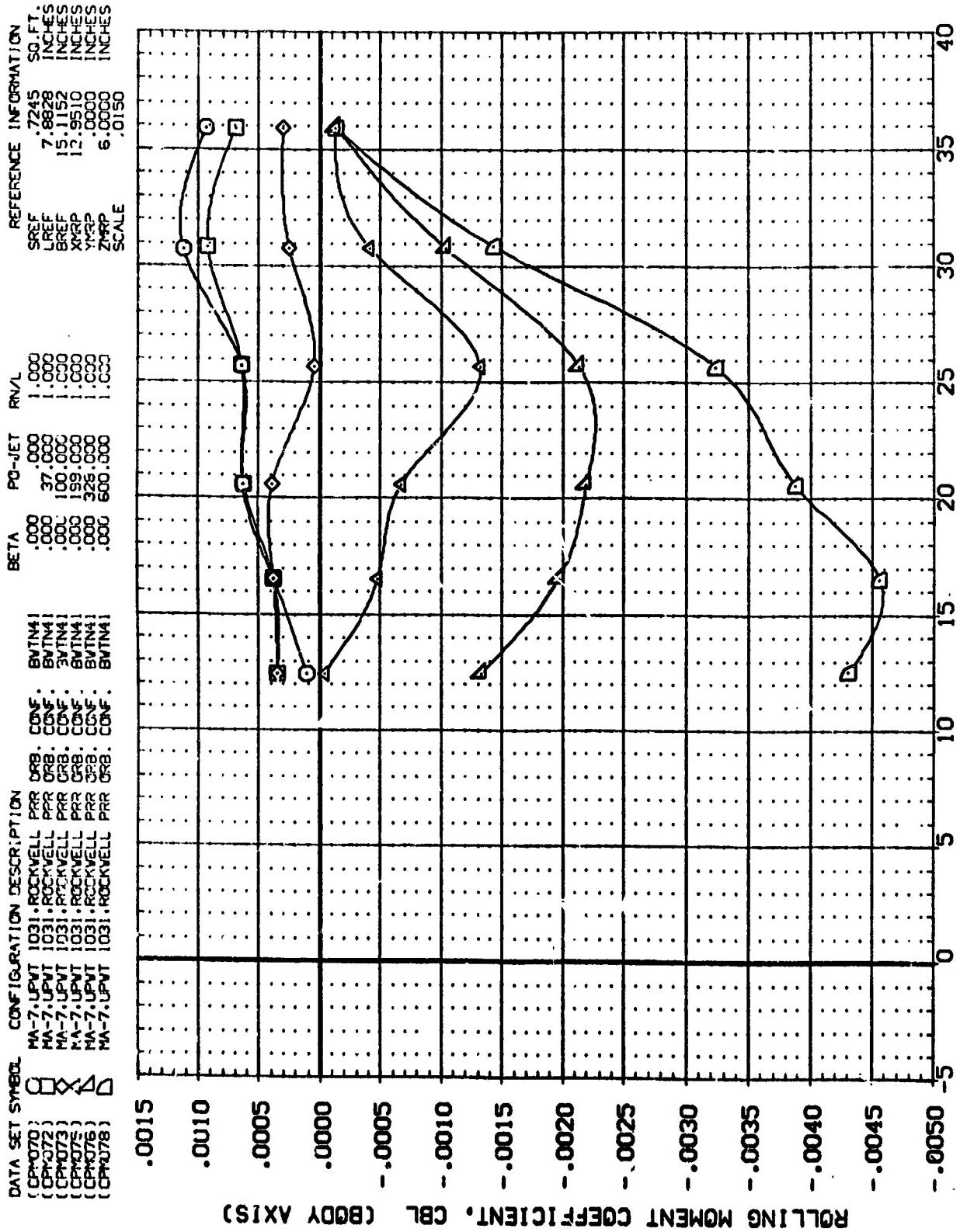
(CP-070)	MA-7, UPVT	IC31	ROCKWELL	PFR	ORG.	CONF.	BVTN4
(CP-071)	MA-7, UPVT	IC31	ROCKWELL	PFR	ORG.	CONF.	BVTN4
(CP-073)	MA-7, SPVT	IC31	ROCKWELL	PFR	ORG.	CONF.	BVTN4
(CP-075)	MA-7, SPVT	IC31	ROCKWELL	PFR	ORG.	CONF.	BVTN4
(CP-076)	MA-7, SPVT	IC31	ROCKWELL	PFR	ORG.	CONF.	BVTN4
(CP-078)	MA-7, SPVT	IC31	ROCKWELL	PFR	ORG.	CONF.	BVTN4

REFERENCE INFORMATION  
 SREF SC. FT.  
 LREF 7.8828  
 BREF 15.1152  
 XMRP 12.9610  
 YMRP 6.0000  
 ZMRP .0000  
 SCALE .0150



EFFECT OF PITCH/ROLL JETS FIRING TOWARD VERT. TAIL (RIGHT-SIDE JETS ONLY)  
 $C_{MACH} = 4.00$

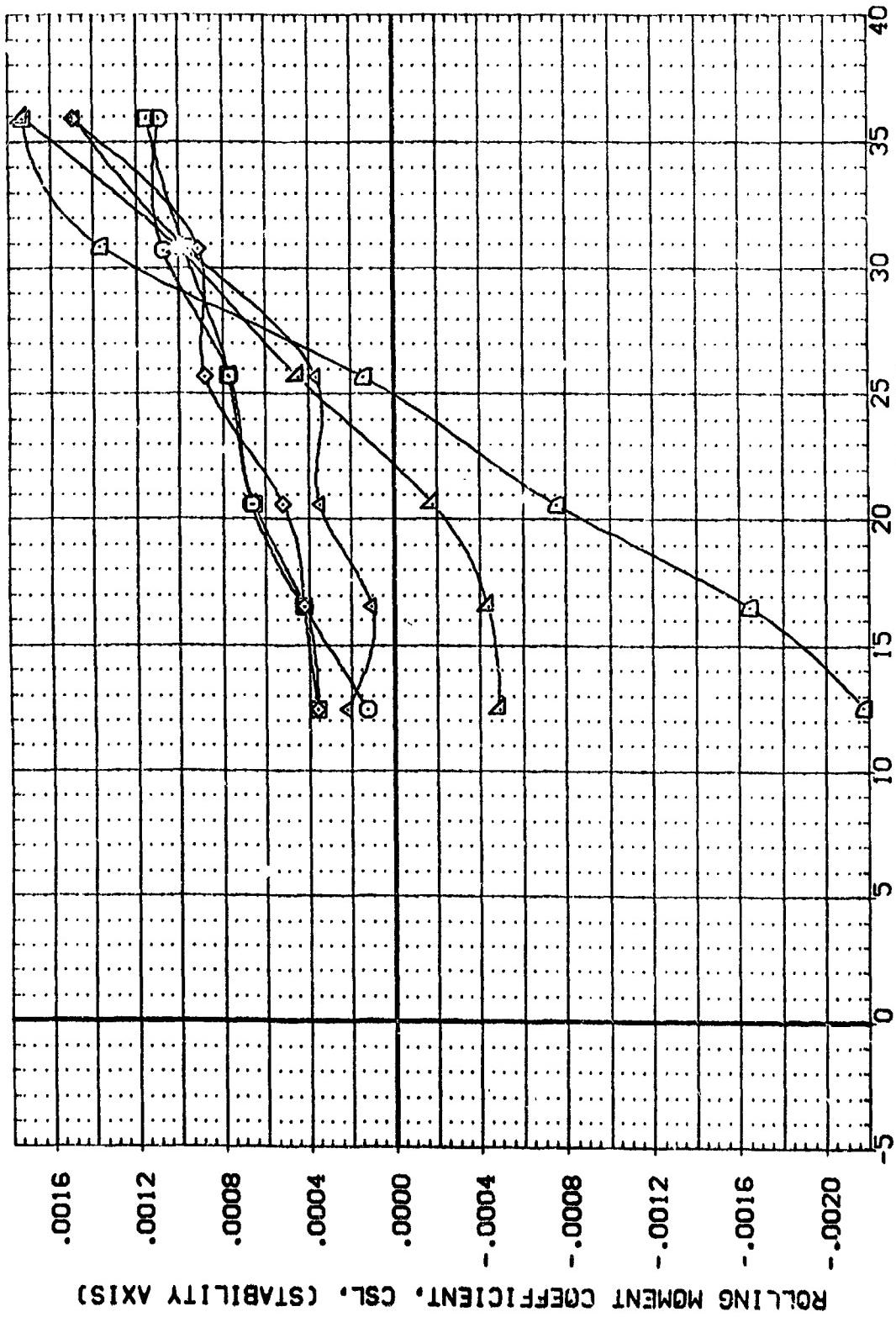
DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	P0-JET	RNL
(CPM072)	MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN4	.000	.000	1.000
(CPM072)	MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN4	.000	.37 .000	.000
(CPM073)	MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN4	.000	.100 .000	.000
(CPM074)	MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN4	.000	.199 .000	.000
(CPM075)	MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN4	.000	.326 .000	.000
(CPM076)	MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN4	.000	.600 .000	.000
(CPM078)	MA-7, UPVT 1031, ROCKWELL PRR, CONF. BVTN4	.000		



EFFECT OF PITCH/ROLL JETS FIRING TOWARD VERT. TAIL (RIGHT-SIDE JETS ONLY)  
( $\Delta$ MACH = 4.00)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	P0-JET	R0/L
(CPM070)	MA-7. UPNT 1031. ROCKWELL PRR CDF. CONF. BWTN4	.000	.000	1.000
(CPM071)	MA-7. UPNT 1031. ROCKWELL PRR CDF. CONF. BWTN4	.000	.000	.000
(CPM072)	MA-7. UPNT 1031. ROCKWELL PRR CDF. CONF. BWTN4	.000	.000	.000
(CPM073)	MA-7. UPNT 1031. ROCKWELL PRR CDF. CONF. BWTN4	.000	.000	.000
(CPM075)	MA-7. UPNT 1031. ROCKWELL PRR CDF. CONF. BWTN4	.000	.000	.000
(CPM076)	MA-7. UPNT 1031. ROCKWELL PRR CDF. CONF. BWTN4	.000	.000	.000
(CPM078)	MA-7. UPNT 1031. ROCKWELL PRR CDF. CONF. BWTN4	.000	.000	.000

REFERENCE INFORMATION  
SREF .7245 SQ.FT.  
LREF 7.8828 INCHES  
BREF 15.1152 INCHES  
XMR? 12.9510 INCHES  
YMR? 6.0000 INCHES  
ZMR? .0150 INCHES  
SCALE

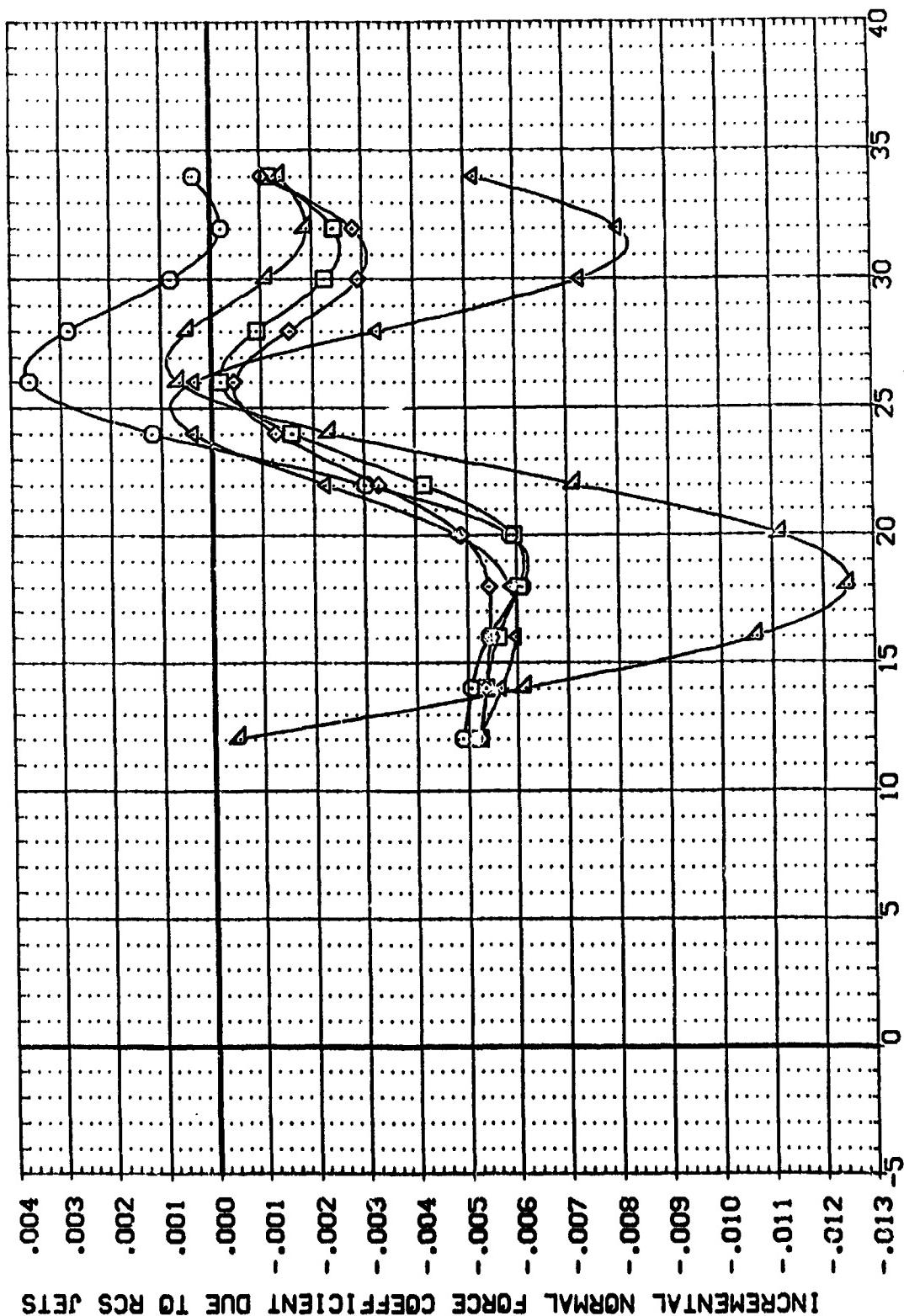


EFFECT OF PITCH/ROLL JETS FIRING TOWARD VERT. TAIL (RIGHT-SIDE MTS ONLY)  
 $C_{Y\text{MACH}} = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION BVTN4 BVTN4 BVTN4 BVTN4 BVTN4 BVTN4 BVTN4 BVTN4 BVTN4 BVTN4

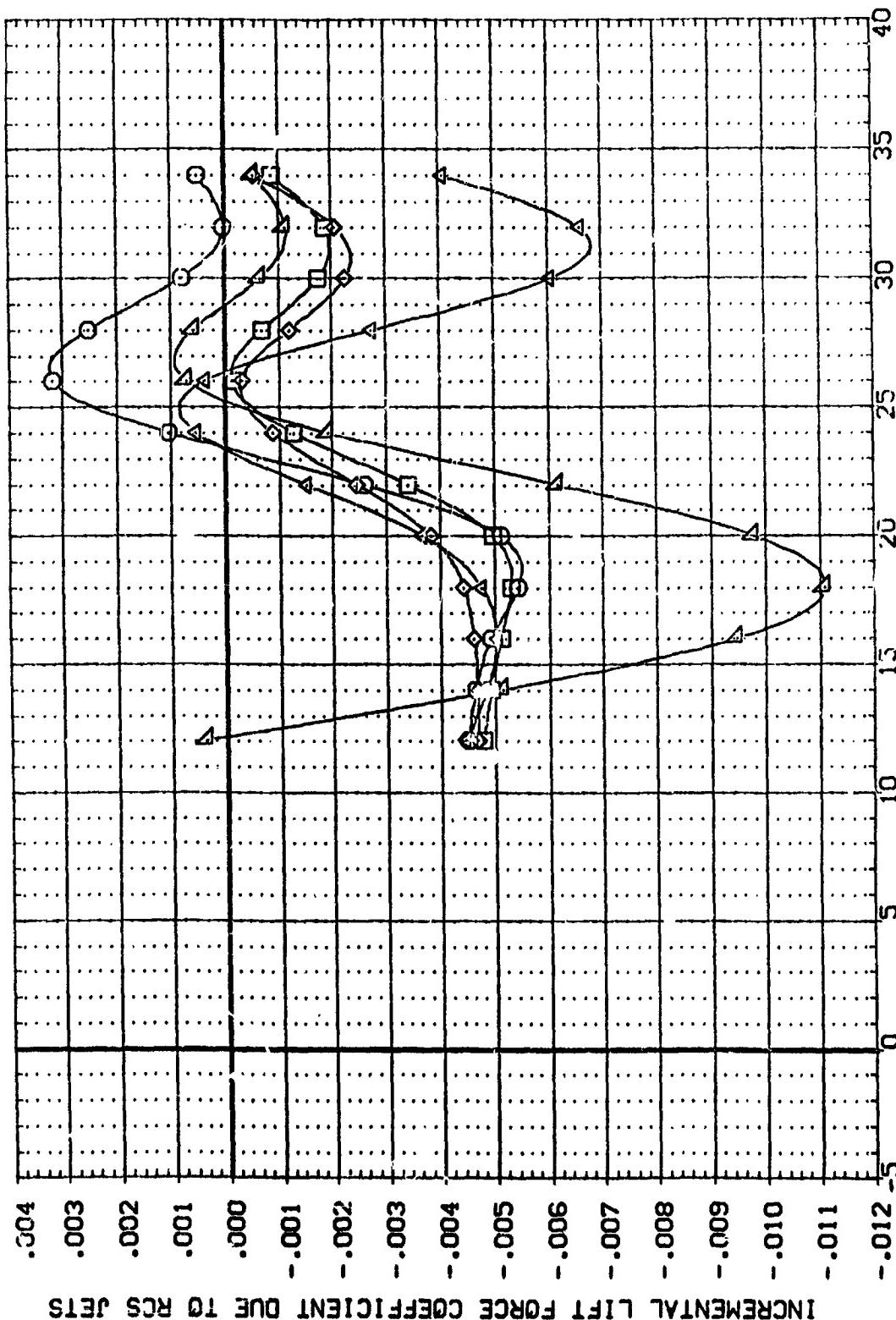
(APM072)	□	MA-7, UPNT	1031, ROCKWELL	GRB. CONF.	.000	37.000	1.000	SREF	.7245
(APM073)	□	MA-7, UPNT	1031, ROCKWELL	GRB. CONF.	.000	100.000	1.000	URF	.8873
(APM075)	△	MA-7, UPNT	1031, ROCKWELL	GRB. CONF.	.000	199.000	1.000	URF	15.152
(APM076)	□	MA-7, UPNT	1031, ROCKWELL	GRB. CONF.	.000	323.000	1.000	XTRP	12.951
(APM078)	△	MA-7, UPNT	1031, ROCKWELL	GRB. CONF.	.000	600.000	1.000	YTRP	.0000
								ZTRP	6.3150

REFERENCE INFORMATION  
SREF 52.FT.  
URF INCHES  
URF INCHES  
XTRP INCHES  
YTRP INCHES  
ZTRP INCHES  
SCALE 1:150

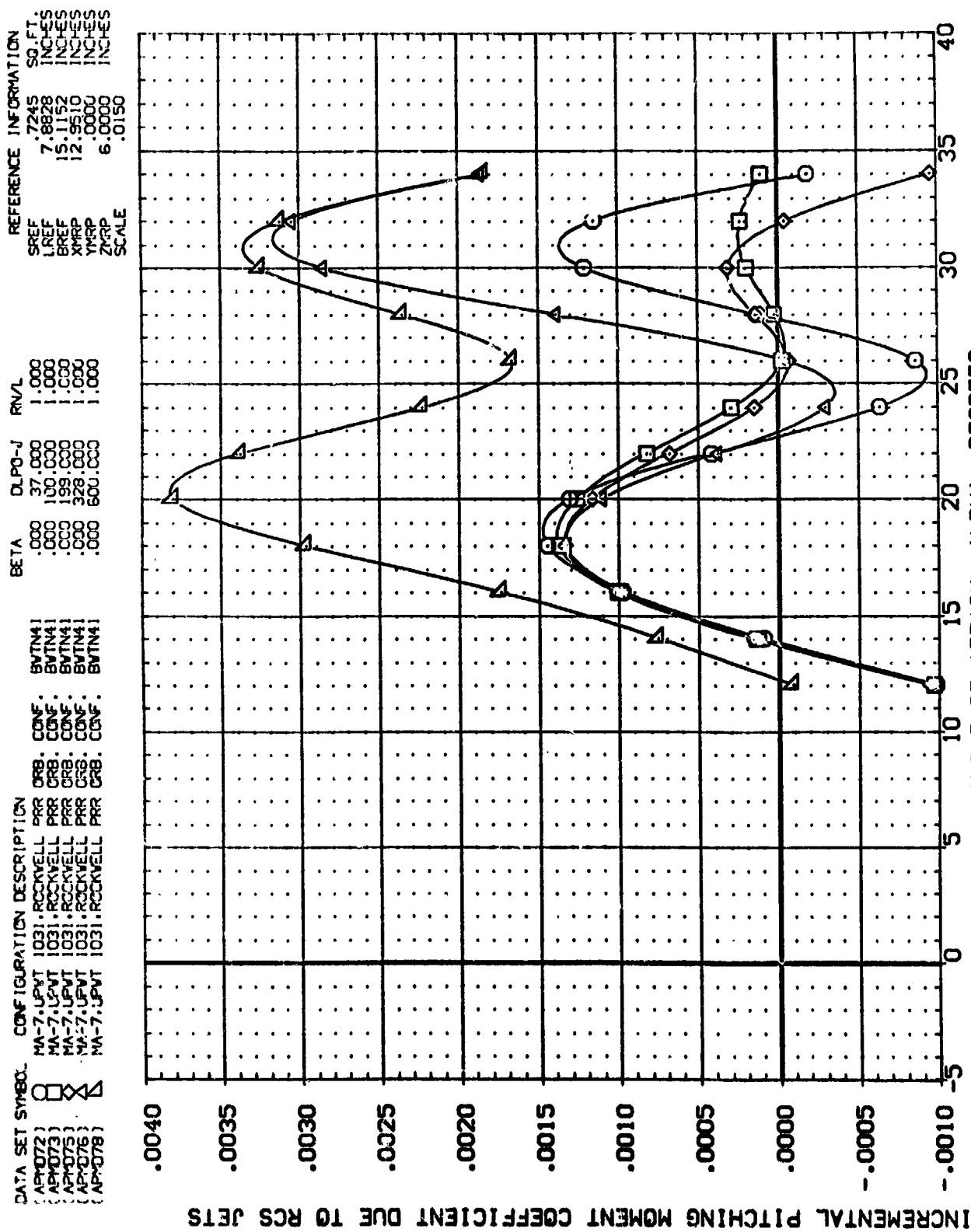


INTERFERENCE EFFECTS OF RIGHT-SIDE PITCH/ROLL JETS FIRING TOWARD VERT. TAIL  
( $\Delta$ MACH = 4.00)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	RNL	DLPC-J	REFERENCE INFORMATION
(APPC72)	MA-7. UPVT 1031. ROCKWELL PRR CR8. CCRF.	.000	.37.000	SREF .7245 SQ.FT.
(APPC73)	MA-7. UPVT 1031. ROCKWELL PRR CR8. CCRF.	.000	.100.000	SREF 7.6828 INCHES
(APPC74)	MA-7. UPVT 1031. ROCKWELL PRR CR8. CCRF.	.000	.199.000	X*22 15.1152 INCHES
(APPC75)	MA-7. UPVT 1031. ROCKWELL PRR CR8. CCRF.	.000	.328.000	Y*22 12.9510 INCHES
(APPC76)	MA-7. UPVT 1031. ROCKWELL PRR CR8. CCRF.	.000	.600.000	Z*22 6.0000 INCHES
(APPC78)	MA-7. UPVT 1031. ROCKWELL PRR CR8. CCRF.	.000	.000.000	SCALE .0150



INTERFERENCE EFFECTS OF RIGHT-SIDE PITCH/ROLL JETS FIRING TOWARD VERT. TAIL  
 $C_MACH = 4.00$



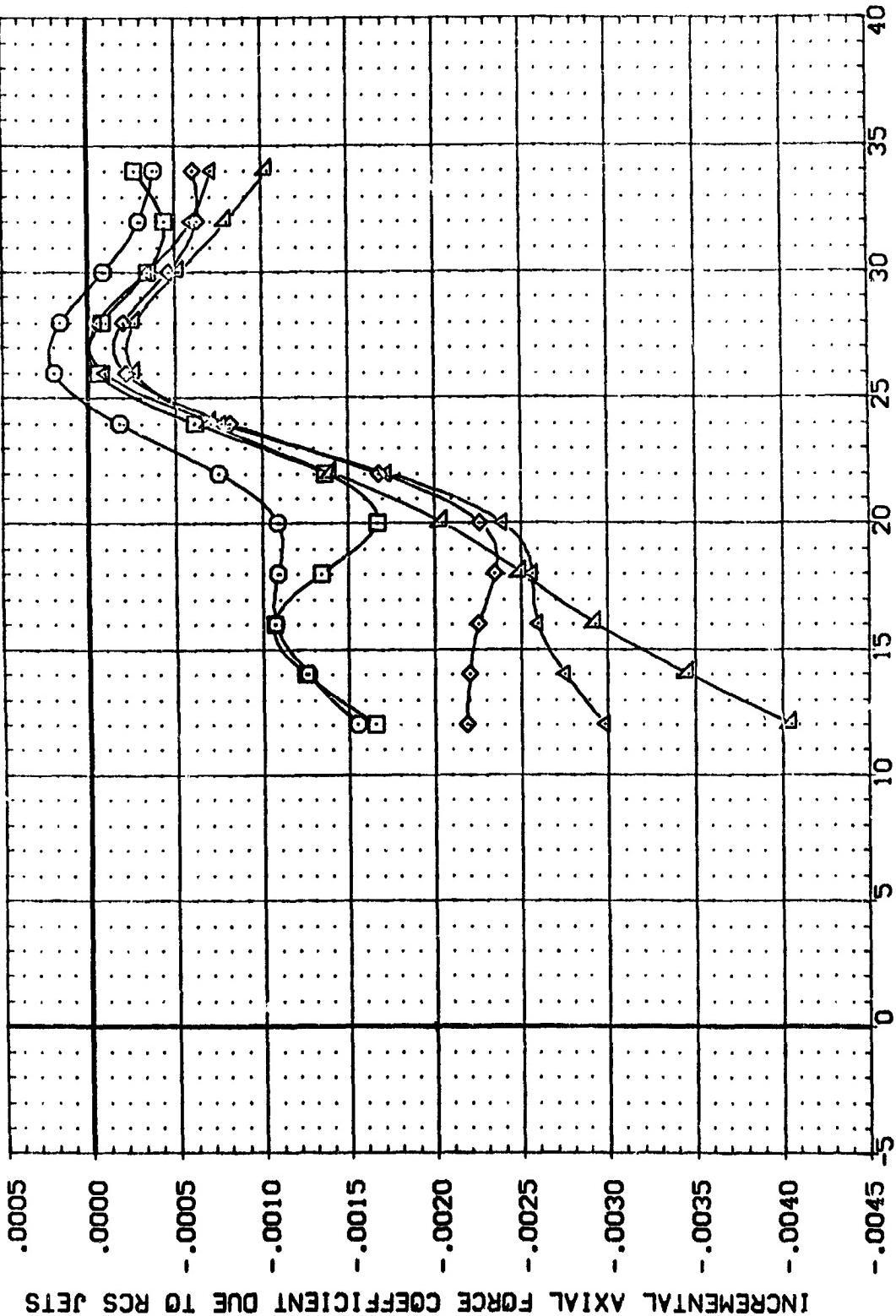
INTERFERENCE EFFECTS OF RIGHT-SIDE PITCH/ROLL JETS FIRING TOWARD VERT. TAIL  
 $C_{MACH} = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

[APD072]	MA-7. UPVT	1031. ROCKWELL	PRR	G2B.	CONF:	BWTN4
[APD073]	MA-7. UPVT	1031. ROCKWELL	PRR	G2B.	CONF:	BWTN4
[APD075]	MA-7. UPVT	1031. ROCKWELL	P2R	G2B.	CONF:	BWTN4
[APD076]	MA-7. UPVT	1031. ROCKWELL	P2R	G2B.	CONF:	BWTN4
[APD078]	MA-7. UPVT	1031. ROCKWELL	PRR	G2B.	CONF:	BWTN4

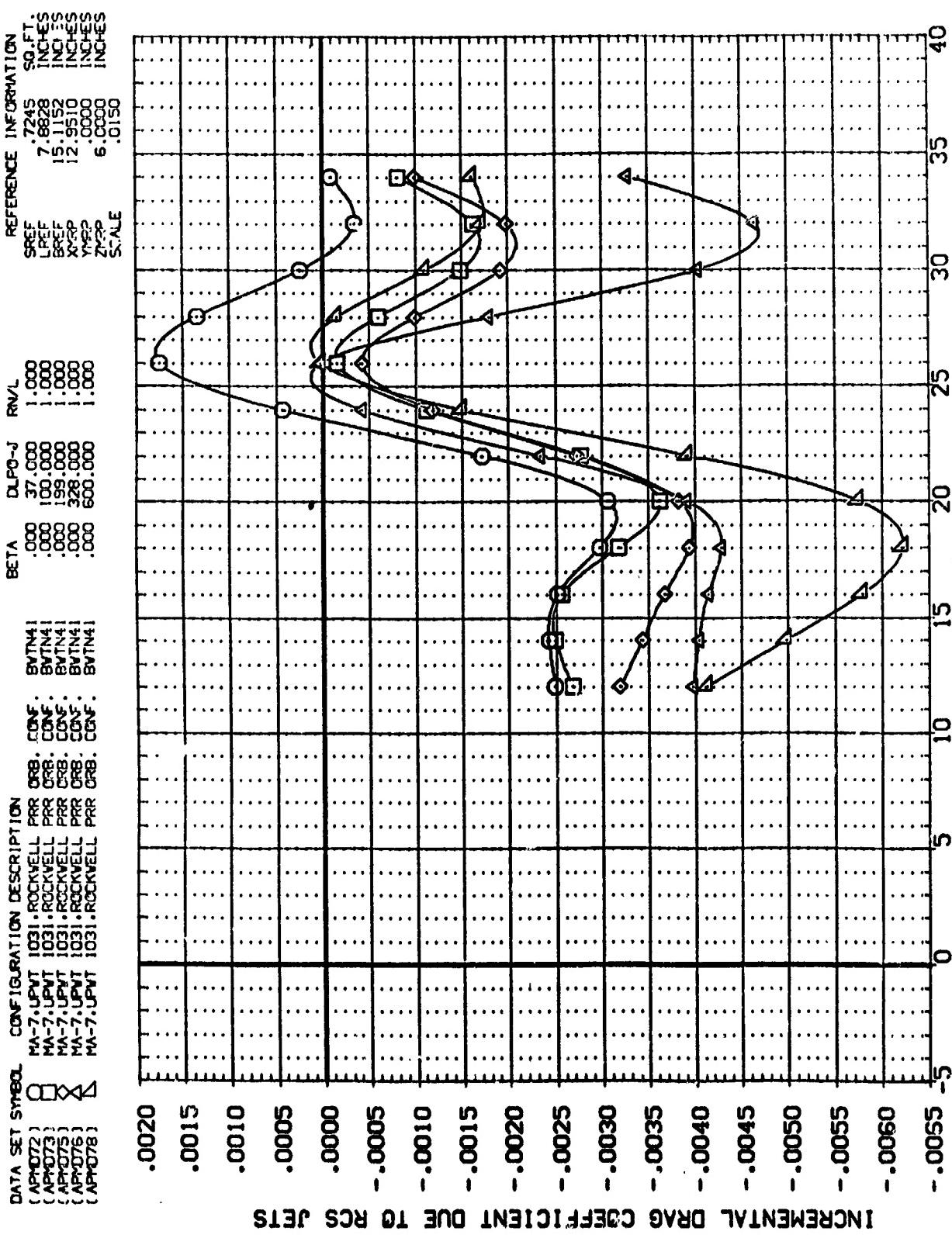
REFERENCE INFORMATION

SREF	.7245	SQ.FT.
LREF	.7828	INCHES
E2EF	15.1152	INCHES
X2RP	12.9910	INCHES
Y2RP	6.0000	INCHES
Z2RP	.0150	SCALE



INTERFERENCE EFFECTS OF RIGHT-SIDE PITCH/ROLL JETS FIRING TOWARD VERT. TAIL  
(MACH = 4.00)

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APM072) MA-7, UPNT 1031, ROCKWELL PRR 008, CONF: BVTN4  
 (APM073) MA-7, UPNT 1031, ROCKWELL PRR 008, CONF: BVTN4  
 (APM073) MA-7, UPNT 1031, ROCKWELL PRR 008, CONF: BVTN4  
 (APM076) MA-7, UPNT 1031, ROCKWELL PRR 008, CONF: BVTN4  
 (APM078) MA-7, UPNT 1031, ROCKWELL PRR 008, CONF: BVTN4



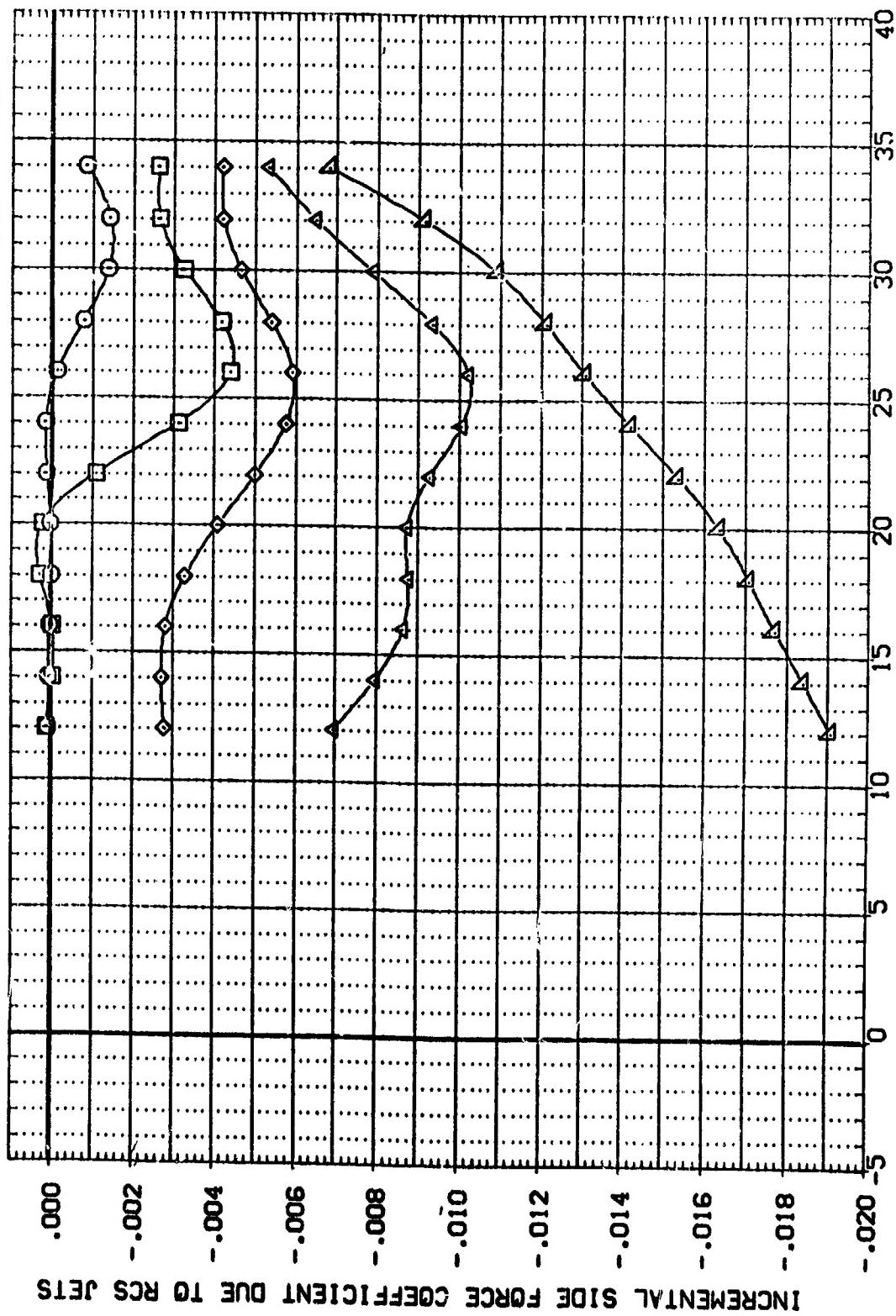
INTERFERENCE EFFECTS OF RIGHT-SIDE PITCH/ROLL JETS FIRING TOWARD VERT. TAIL  
 $(\Delta)_{MACH} = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APM072)	○	MA-7, UPN
(APM073)	□	MA-7, UPN
(APM074)	◇	MA-7, UPN
(APM075)	△	MA-7, UPN
(APM076)	◆	MA-7, UPN
(APM078)	▽	MA-7, UPN

REFERENCE INFORMATION

SREF	.7245	SC. FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XMRP	12.9510	INCHES
YMRP	6.0000	INCHES
ZMRP	.0150	SCALE

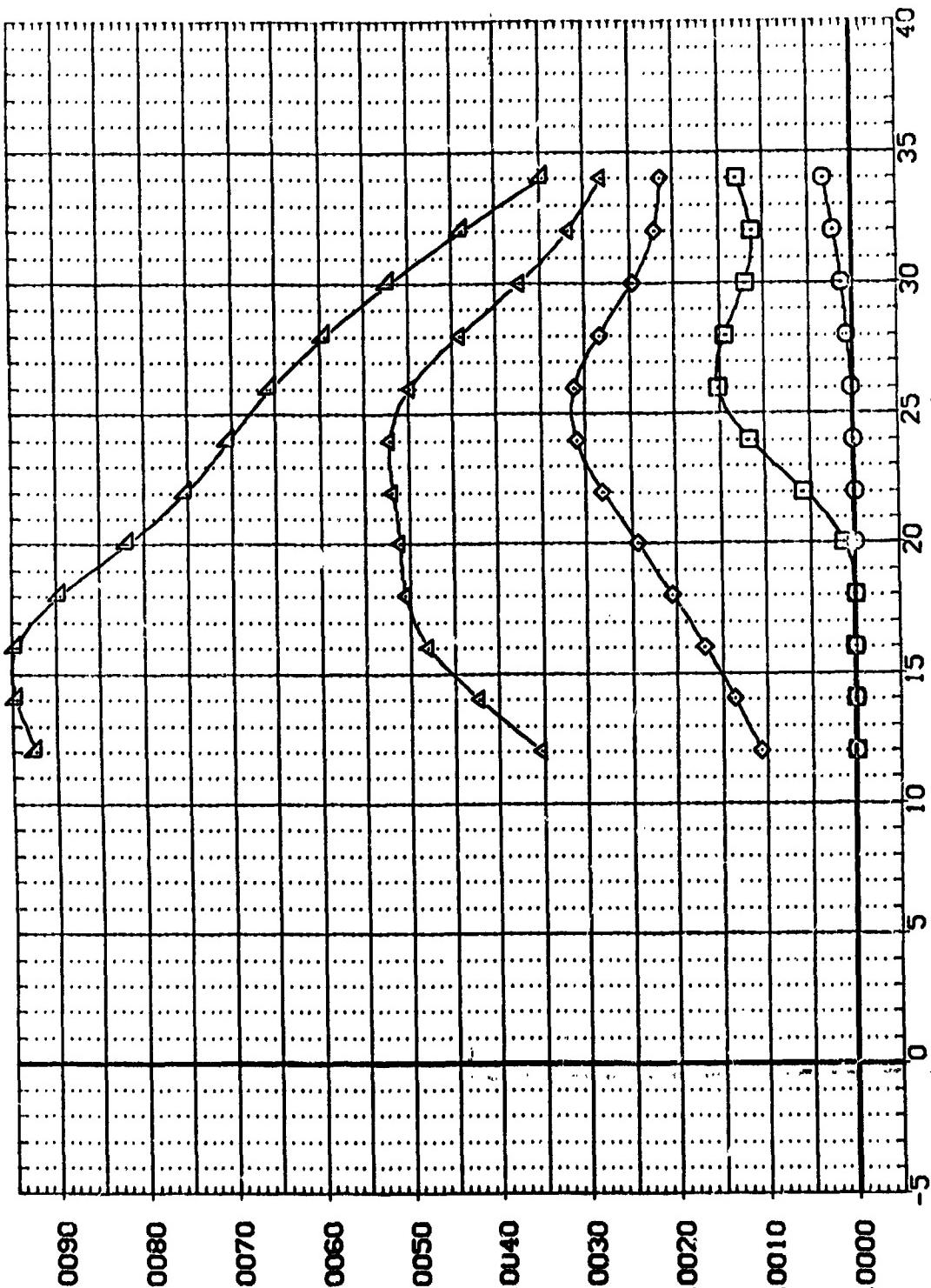


INTERFERENCE EFFECTS OF RIGHT-SIDE PITCH/ROLL JETS FIRING TOWARD VERT. TAIL  
( $\text{MACH} = 4.00$ )

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APPD72)	MA-7. UPY	1031. ROCKWELL PRR ORB. CONF.
(APPD73)	MA-7. LSY	1031. ROCKWELL PRR ORB. CONF.
(APPD75)	MA-7. JPY	1031. ROCKWELL PRR ORB. CONF.
(APPD76)	MA-7. JPY	1031. ROCKWELL PRR ORB. CONF.
(APPD78)	MA-7. JPY	1031. ROCKWELL PRR ORB. CONF.

REFERENCE INFORMATION  
 SREF 7.7245 20 FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0153



INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (BODY AXIS)

INTERFERENCE EFFECTS OF RIGHT-SIDE PITCH/ROLL JETS FIRING TOWARD VERT. TAIL  
 (A)MACH = 4.00

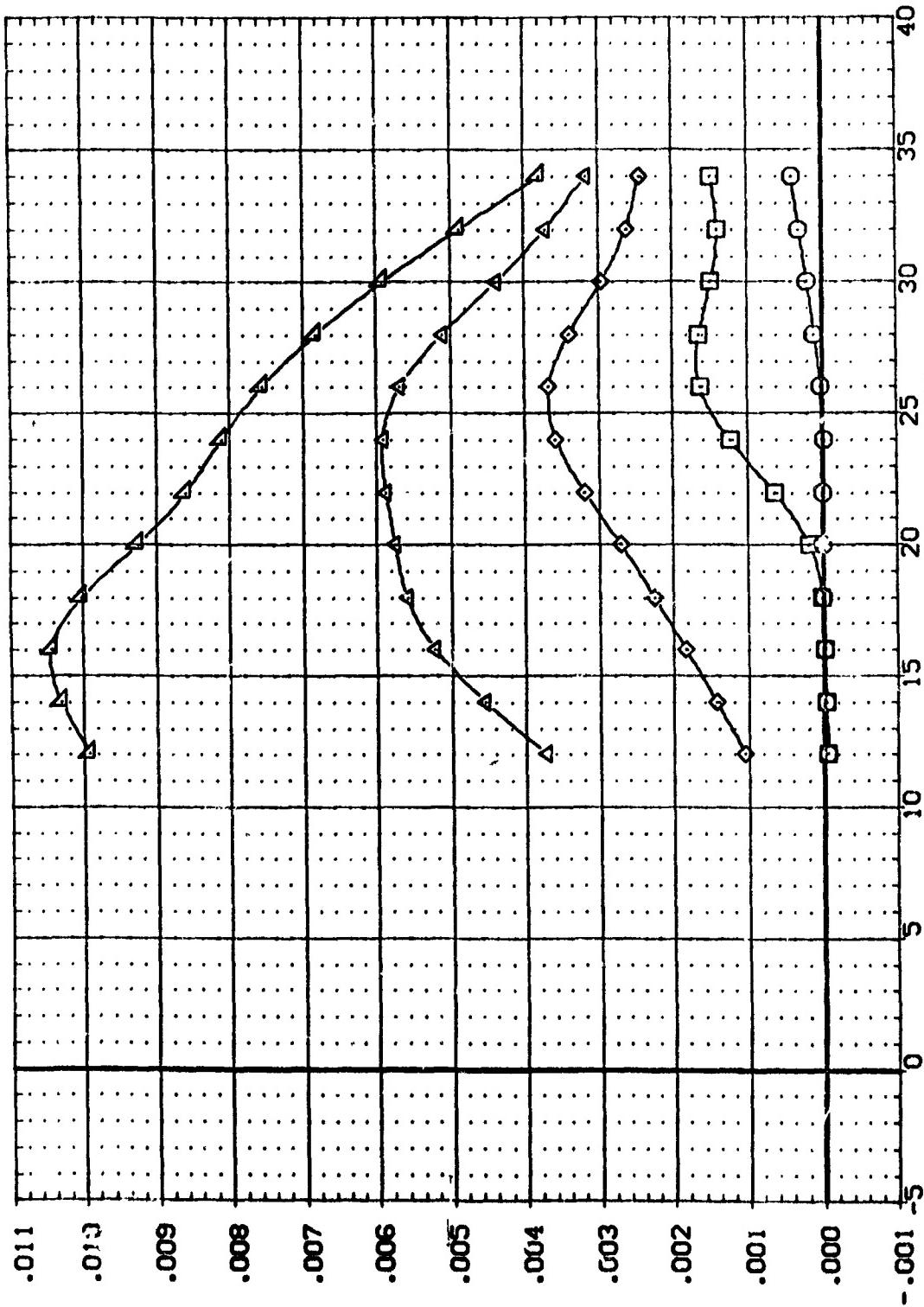
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DATA SET SYMBOL

(APR072) MA-7-UPVT 1031-ROCKWELL PRR CRB. CONF. BVTN4  
 (APR073) MA-7-UPVT 1031-ROCKWELL PRR CRB. CONF. BVTN4  
 (APR075) MA-7-UPVT 1031-ROCKWELL PRR CRB. CONF. BVTN4  
 (APR076) MA-7-UPVT 1031-ROCKWELL PRR CRB. CONF. BVTN4  
 (APR078) MA-7-UPVT 1031-ROCKWELL PRR CRB. CONF. BVTN4

CONFIGURATION DESCRIPTION

SREF .7245 SQ.FT.  
 LREF 7.8628 INCHES  
 BREF 5.1152 INCHES  
 XTRP 12.9510 INCHES  
 YTRP .0000 INCHES  
 ZTRP 6.0000 INCHES  
 SCALE .0150



INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (STABILITY AXIS)

INTERFERENCE EFFECTS OF RIGHT-SIDE PITCH/ROLL JETS FIRING TOWARD VERT. TAIL  
 $(\Delta MACH = 4.00)$

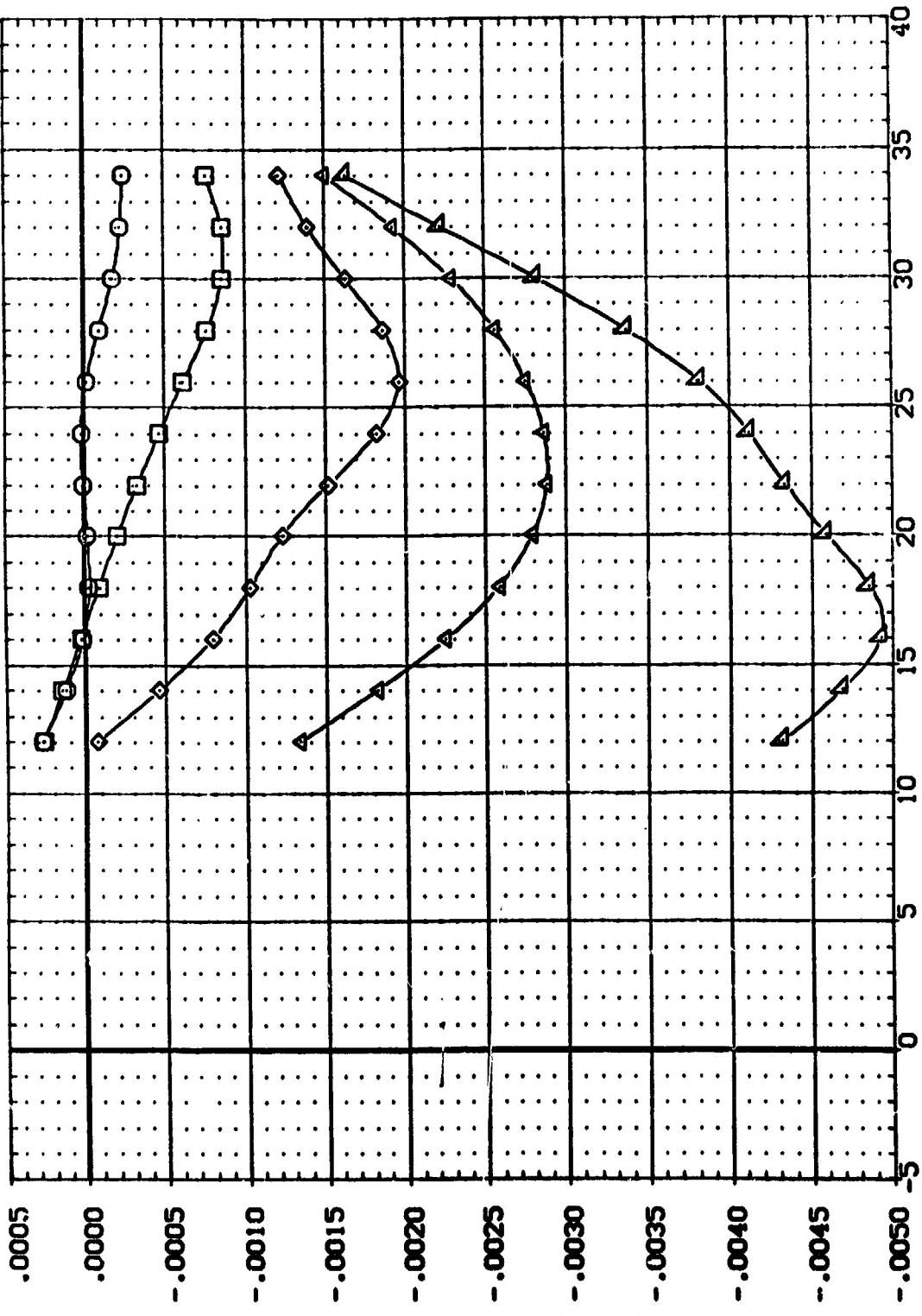
PAGE 248

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(AP-072)	○	MA-7. UPNT 1031. ROCKWELL PRR. CONF.
(AP-073)	□	MA-7. UPNT 1031. ROCKWELL PRR. CONF.
(AP-075)	△	MA-7. UPNT 1031. ROCKWELL PRR. CONF.
(AP-076)	◆	MA-7. UPNT 1031. ROCKWELL PRR. CONF.
(AP-078)	▽	MA-7. UPNT 1031. ROCKWELL PRR. CONF.

REFERENCE INFORMATION

SREF	.7245	SO. FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XREF	12.9610	INCHES
YREF	.0000	INCHES
ZREF	6.0000	INCHES
SCALE	.0150	



INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS (BODY AXES)

INTERFERENCE EFFECTS OF RIGHT-SIDE PITCH/ROLL JETS FIRING TOWARD VERT. TAIL  
(A)MACH = 4.00

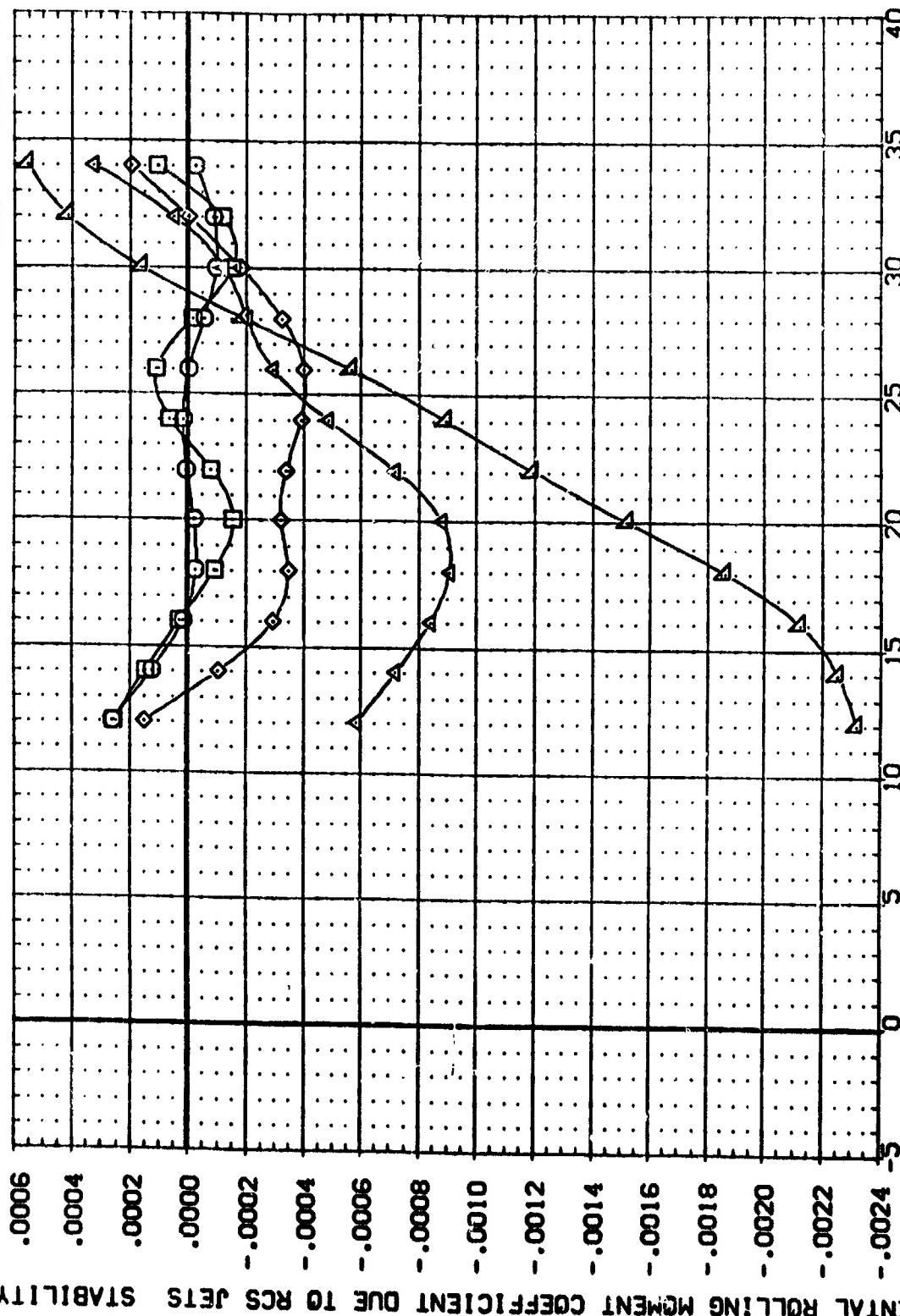
PAGE 249

DATA SET STREAM CONFIGURATION DESCRIPTION

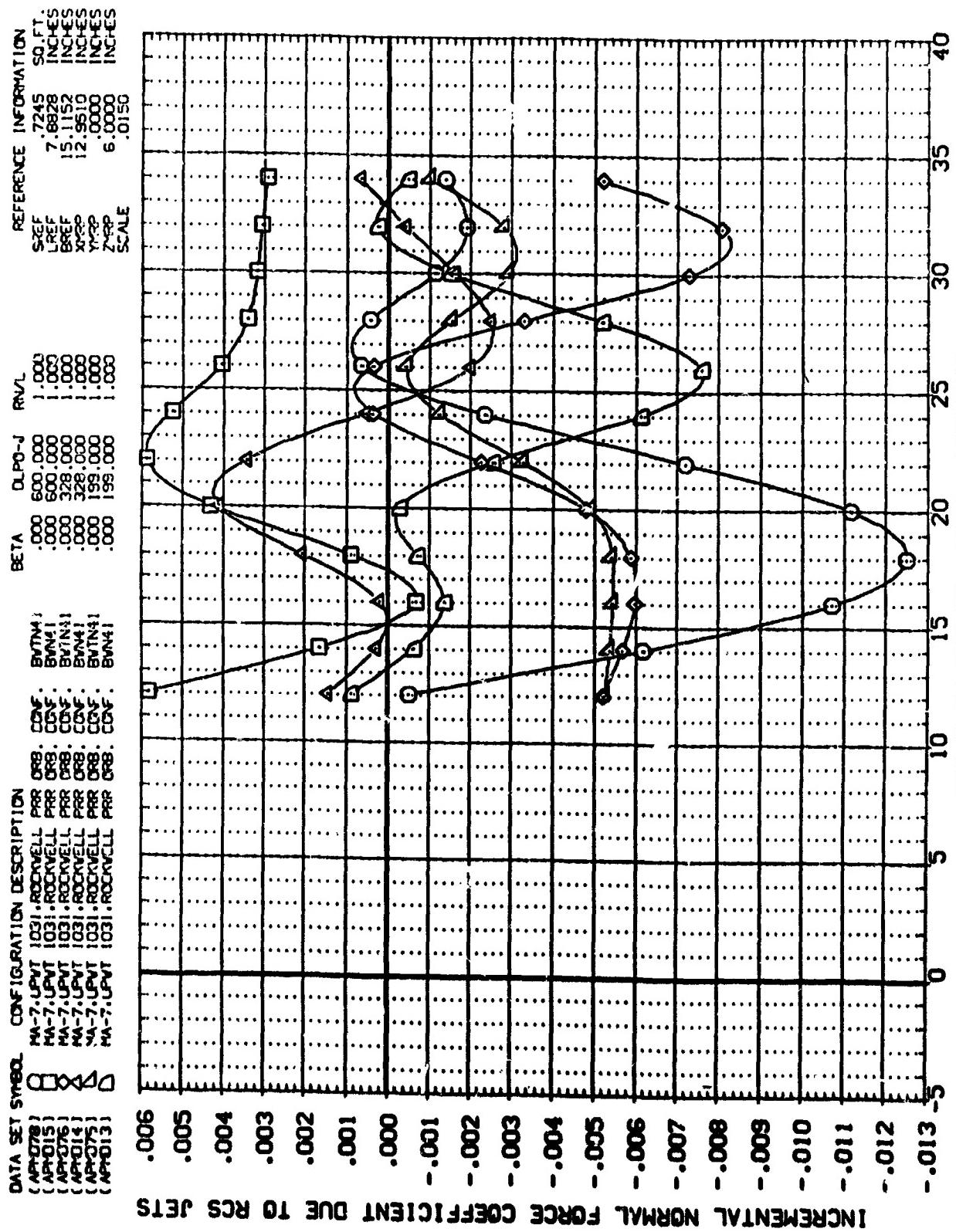
AP072	MA-7. UPVT	1031. ROCKWELL	PER ORB.	CONF: BVTN4
AP073	MA-7. UPVT	1031. ROCKWELL	PER ORB.	CONF: BVTN4
AP075	MA-7. UPVT	1031. ROCKWELL	PER C23.	CONF: BVTN4
AP076	MA-7. UPVT	1031. ROCKWELL	PER C20.	CONF: BVTN4
AP078	MA-7. UPVT	1031. ROCKWELL	PER ORB.	CONF: BVTN4

REFERENCE INFORMATION

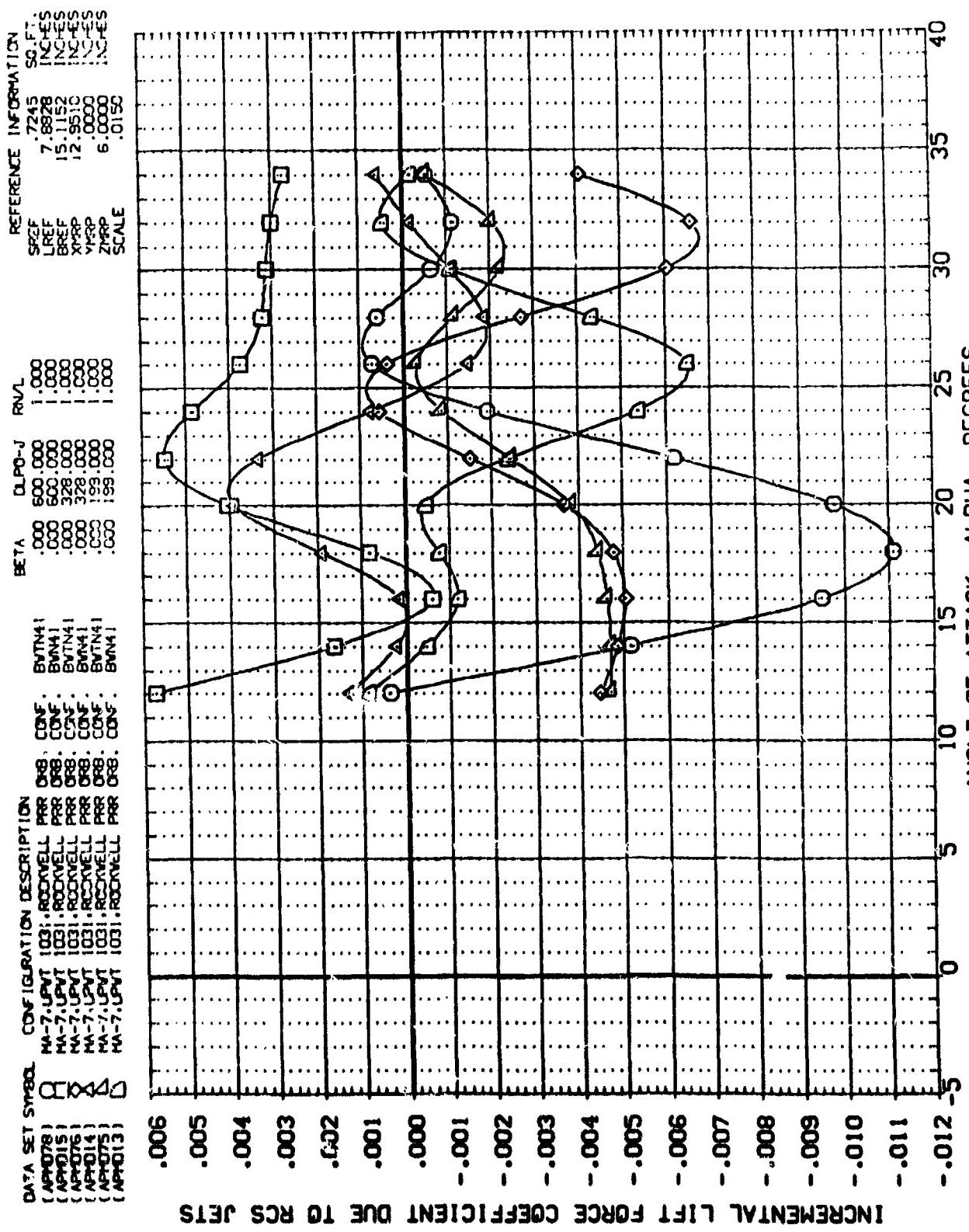
SREF	.7245	SO FT.
LREF	.78828	INCHES
BREF	15.1152	INCHES
XHBP	12.9510	INCHES
YHBP	.0000	INCHES
ZHBP	6.0000	INCHES
SCALE	.0150	



INTERFERENCE EFFECTS OF RIGHT-SIDE PITCH/ROLL JETS FIRING TOWARD VERT. TAIL  
C<sub>AMACH</sub> = 4.00



EFFECT OF VERTICAL TAIL ON INTERFERENCE OF UPWARD FIRING NOZZLES  
 $(\Delta MACH = 4.00)$



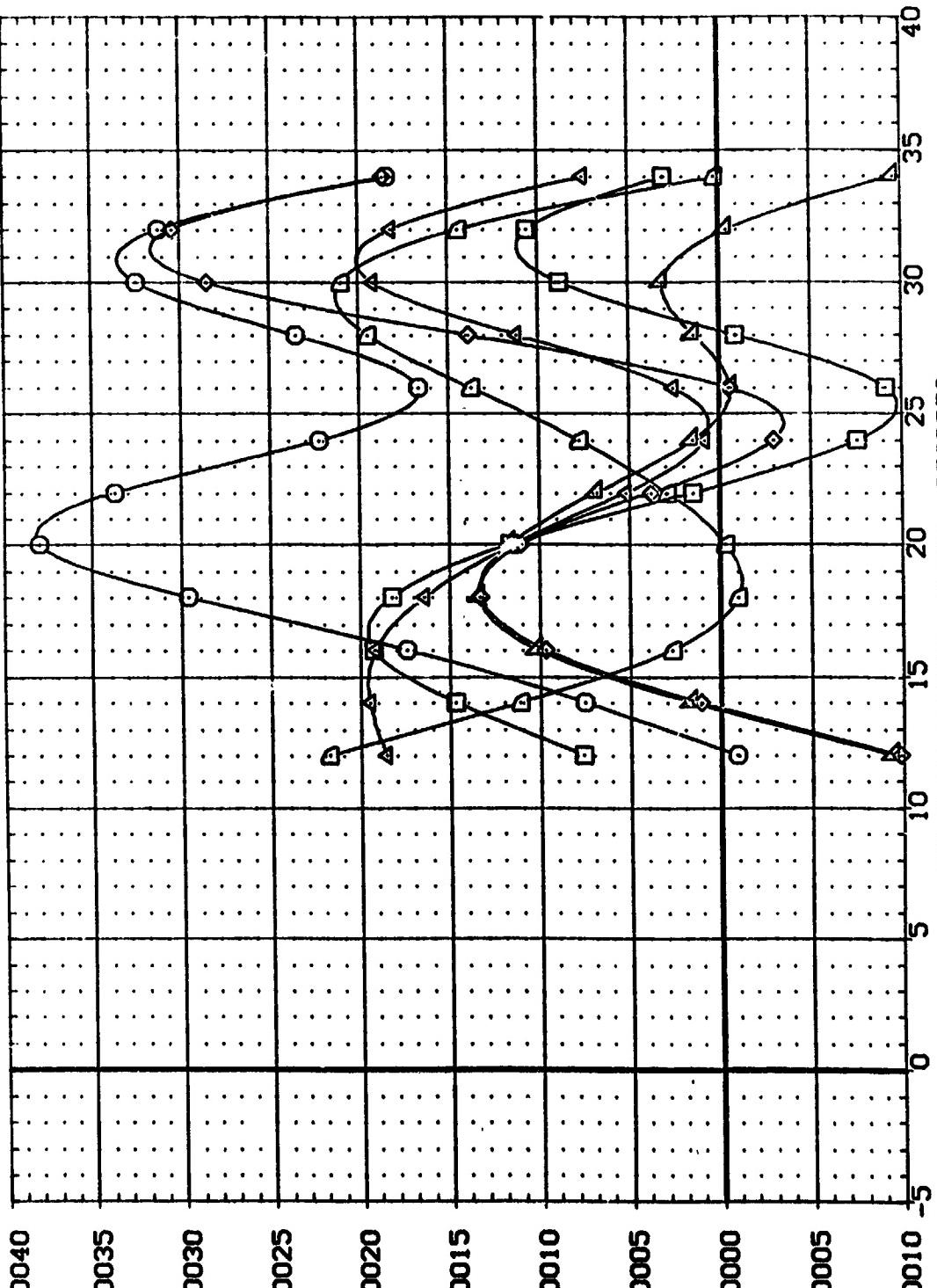
EFFECT OF VERTICAL TAIL ON INFLUENCE OF UPWARD FIRING NOZZLES  
 $(\Delta MACH = \delta .00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APM078)	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BVTN41
(APM015)	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BVN41
(APM076)	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BVTN41
(APM014)	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BVN41
(APM075)	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BVTN41
(APM013)	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BVN41

REFERENCE INFORMATION

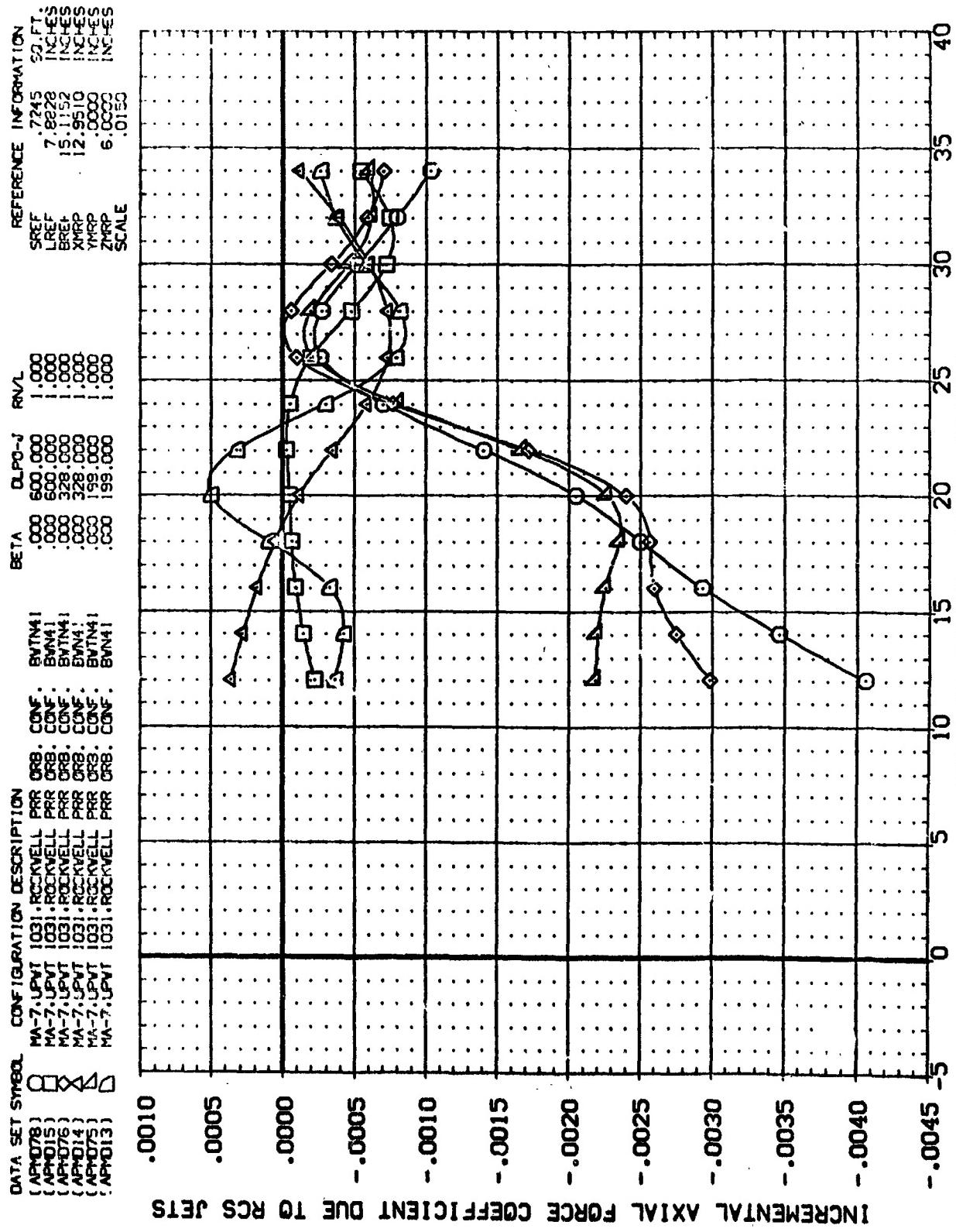
SREF	.7245	SQ.FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XMRP	12.9510	INCHES
YMRP	6.0000	INCHES
ZMRP	.0150	SCALE



EFFECT OF VERTICAL TAIL ON INTERFERENCE OF UPWARD FIRING NOZZLES  
( $\Delta$ MACH = 4.00)

DATA SET STREAM CONFIGURATION DESCRIPTION

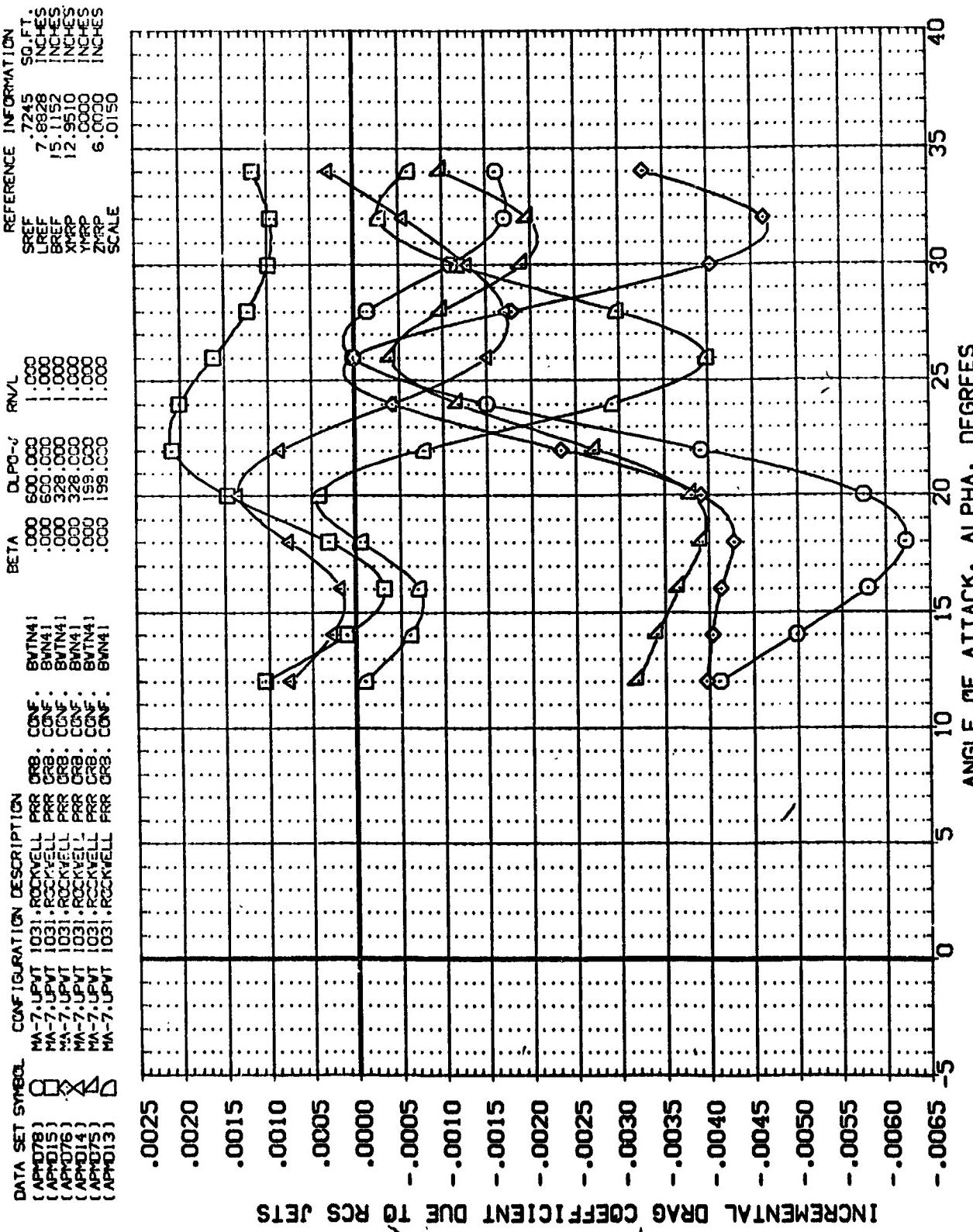
[APM078]	MA-7, UPVT	1031, ROCKWELL	PRR	GRB.	CONF.	BVNT41
[APN015]	MA-7, UPVT	1031, ROCKWELL	PRR	GRB.	CONF.	BVN41
[APD076]	MA-7, UPVT	1031, ROCKWELL	PRR	GRB.	CONF.	BVN41
[APD04]	MA-7, UPVT	1031, ROCKWELL	PRR	GRB.	CONF.	BVN41
[APD013]	MA-7, UPVT	1031, ROCKWELL	PRR	GRB.	CONF.	BVN41
[APD013]	MA-7, UPVT	1031, ROCKWELL	PRR	GRB.	CONF.	BVN41



### EFFECT OF VERTICAL TAIL ON INTERFERENCE OF UPWARD FIRING NOZZLES

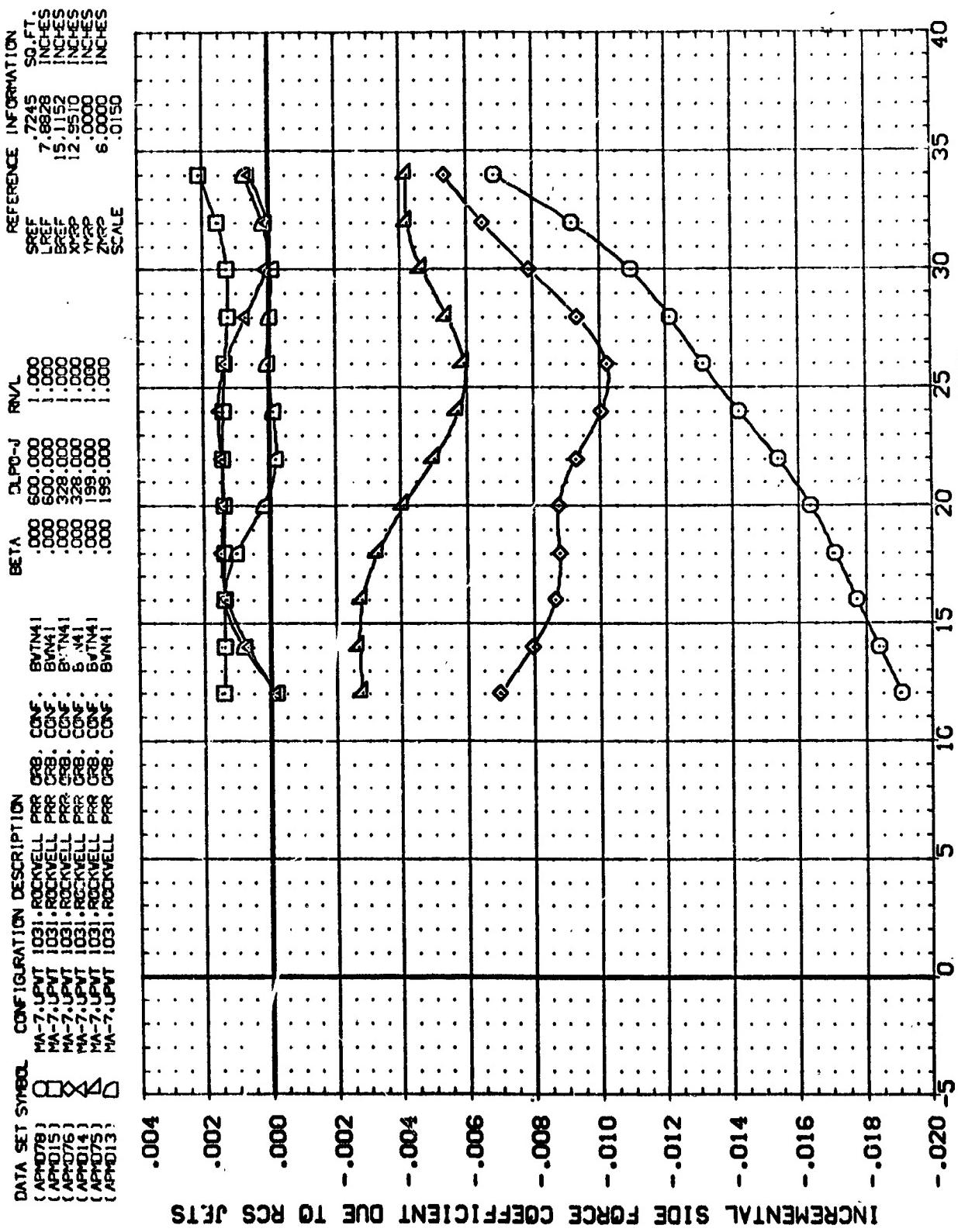
MACH = 4.00

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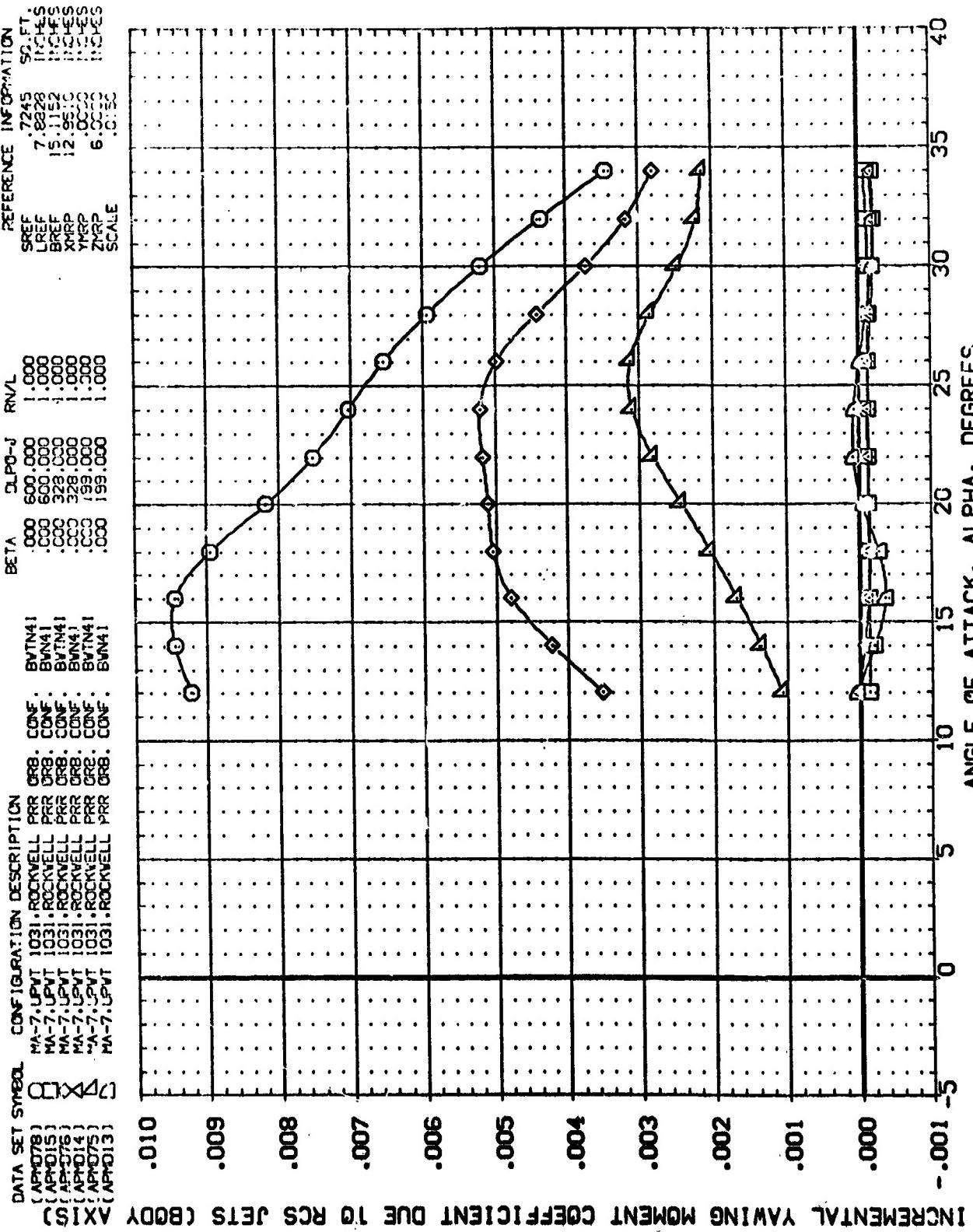


EFFECT OF VERTICAL TAIL ON INTERFERENCE OF UPWARD FIRING NOZZLES

(A)MACH = 4.00



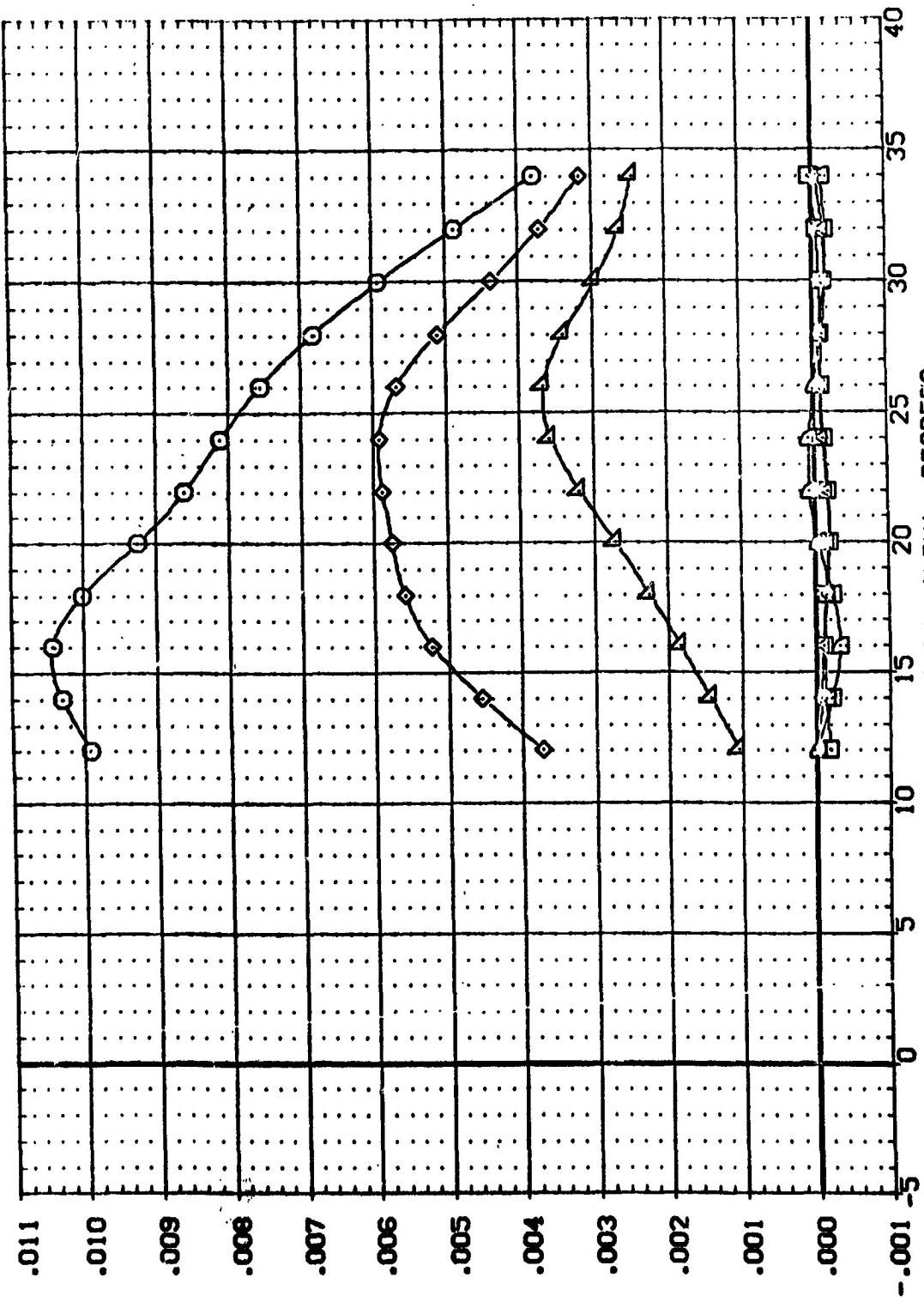
EFFECT OF VERTICAL TAIL ON INTERFERENCE OF UPWARD FIRING NOZZLES  
 $C_{\text{MACH}} = 4.00$



EFFECT OF VERTICAL TAIL ON INTERFERENCE OF UPWARD FIRING NOZZLES

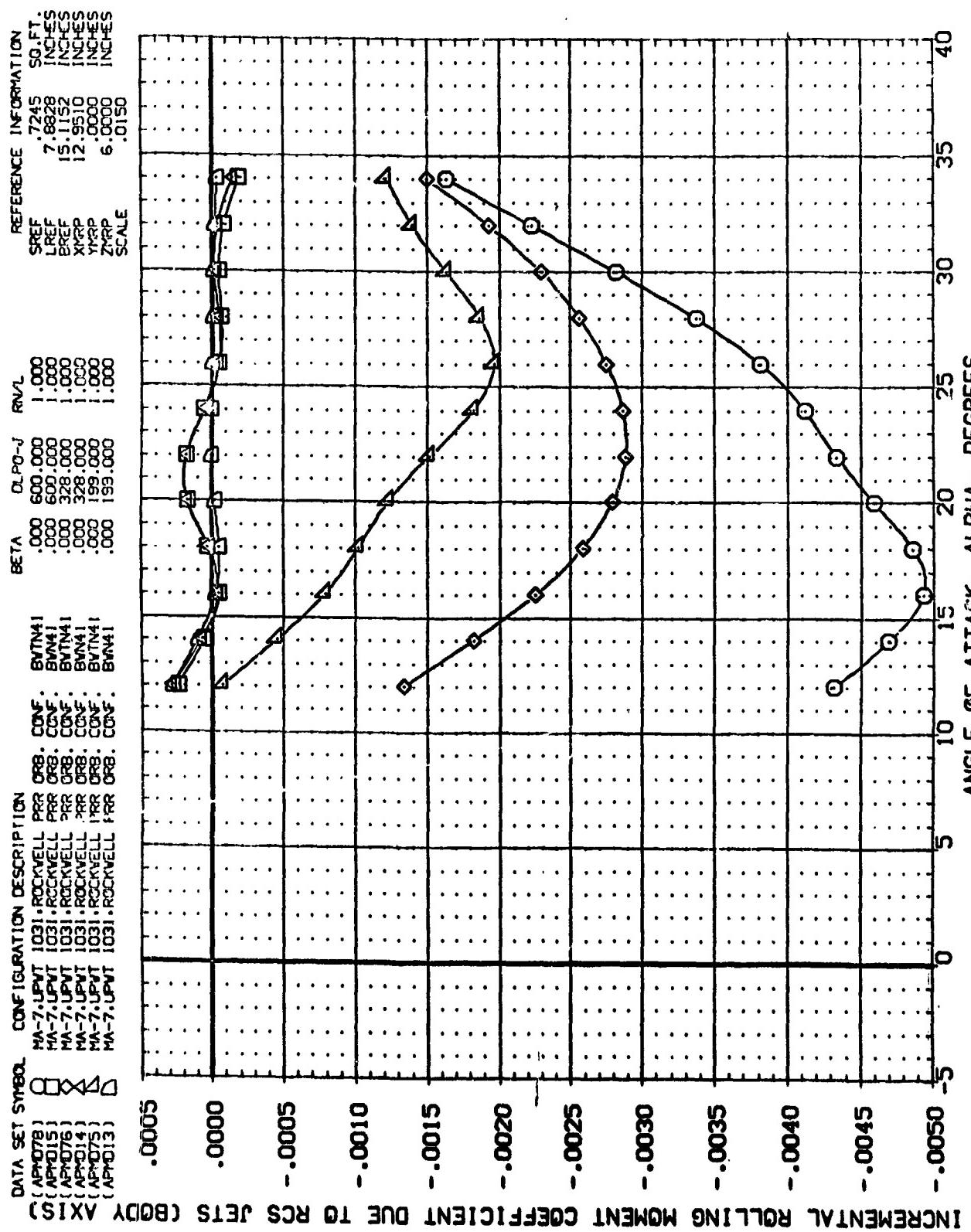
ATMACH = 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	DLPD-J	RNL	REFERENCE INFORMATION
(APD078)	NA-7. UPVT	.031	ROCKWELL	RRR	CONF.
(APD015)	NA-7. UPVT	.031	ROCKWELL	RRR	CONF.
(APD076)	NA-7. UPVT	.031	ROCKWELL	RRR	CONF.
(APD014)	NA-7. UPVT	.031	ROCKWELL	RRR	CONF.
(APD075)	NA-7. UPVT	.031	ROCKWELL	RRR	CONF.
(APD013)	NA-7. UPVT	.031	ROCKWELL	RRR	CONF.



EFFECT OF VERTICAL TAIL ON INTERFERENCE OF UPWARD FIRING NOZZLES  
(MACH = 4.00)

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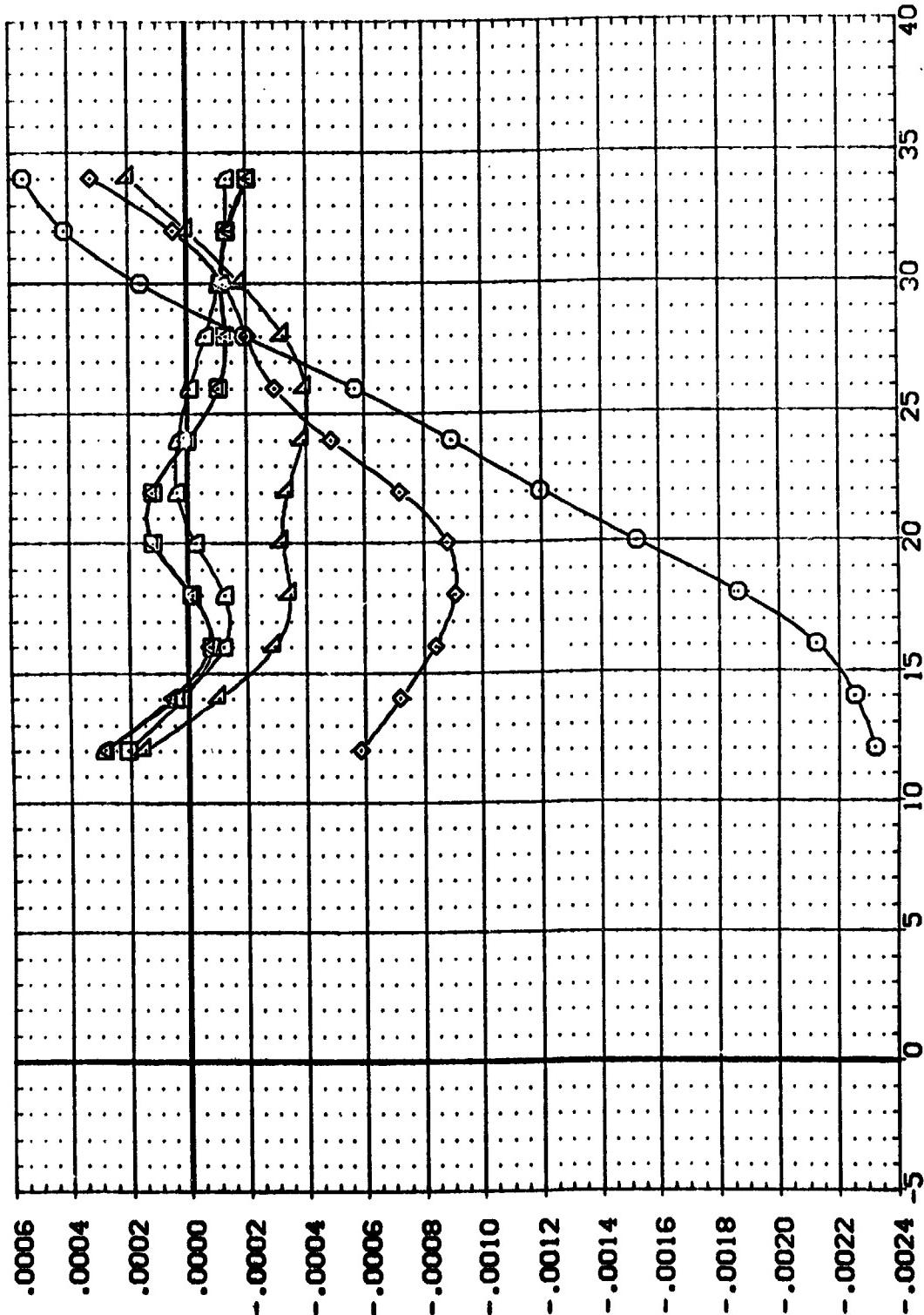


EFFECT OF VERTICAL TAIL ON INTERFERENCE OF UPWARD FIRING NOZZLES  
 $(\text{MACH} = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

	MA-7-UPV	1031-PIKEMELL	PBR	CONF.	BVNTN41	D.PD-J	RNL
(APD078)	□	□	□	CONF.	BVNTN41	.000	600,000
(APD015)	□	□	□	CONF.	BVNTN41	.000	600,000
(APD076)	△	△	△	CONF.	BVNTN41	.000	328,000
(APD014)	△	△	△	CONF.	BVNTN41	.000	328,000
(APD075)	△	△	△	CONF.	BVNTN41	.000	199,000
(APD013)	△	△	△	CONF.	BVNTN41	.000	199,000

	SREF	SC. FT.
LREF	7.8828	YES
BREF	15.1152	YES
XMRP	12.9510	YES
YMRP	6.0000	YES
ZMRP	6.0000	YES
SCALE	.0150	

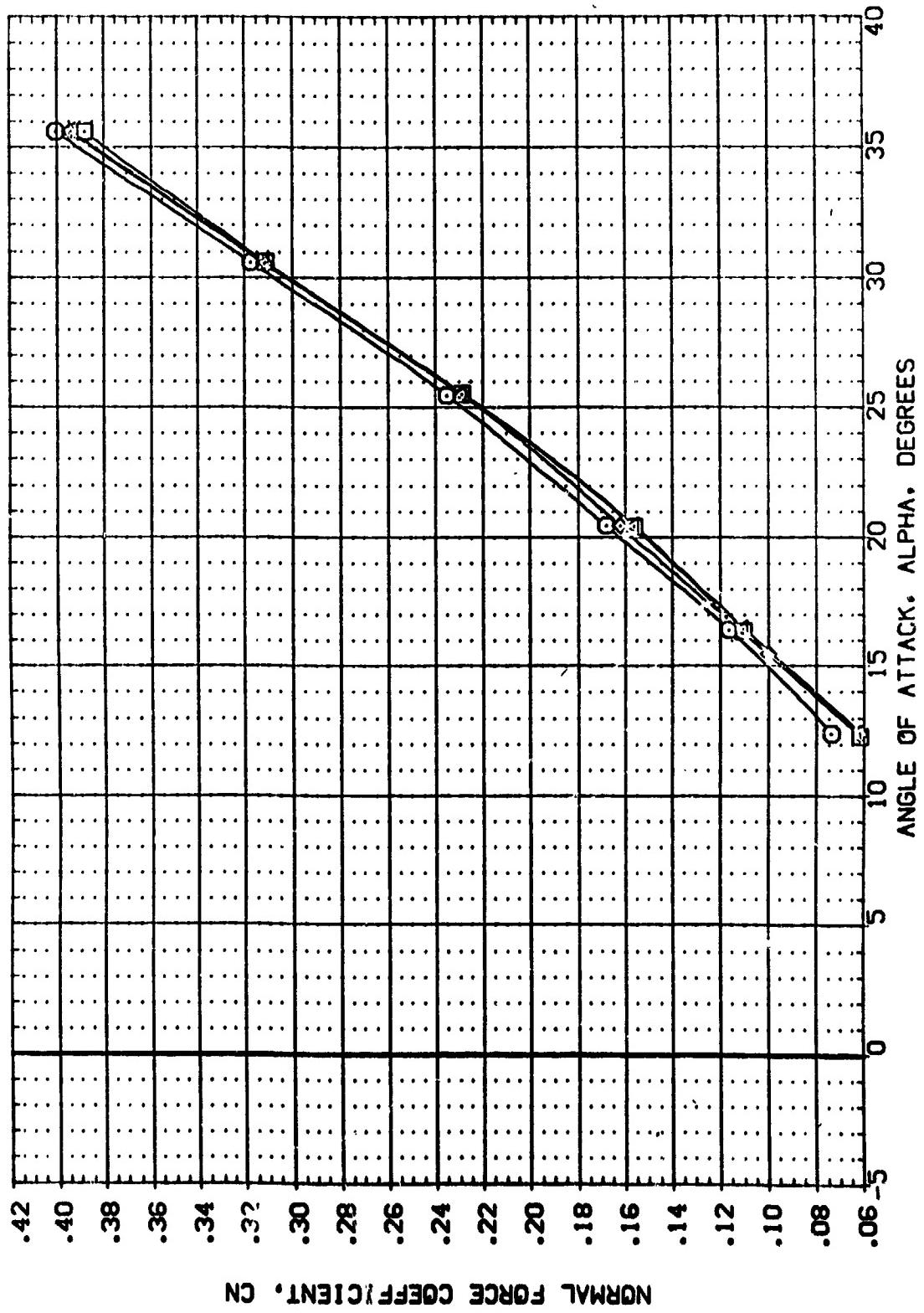


EFFECT OF VERTICAL TAIL ON INTERFERENCE OF UPWARD FIRING NOZZLES  
 $C_{MACH} = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

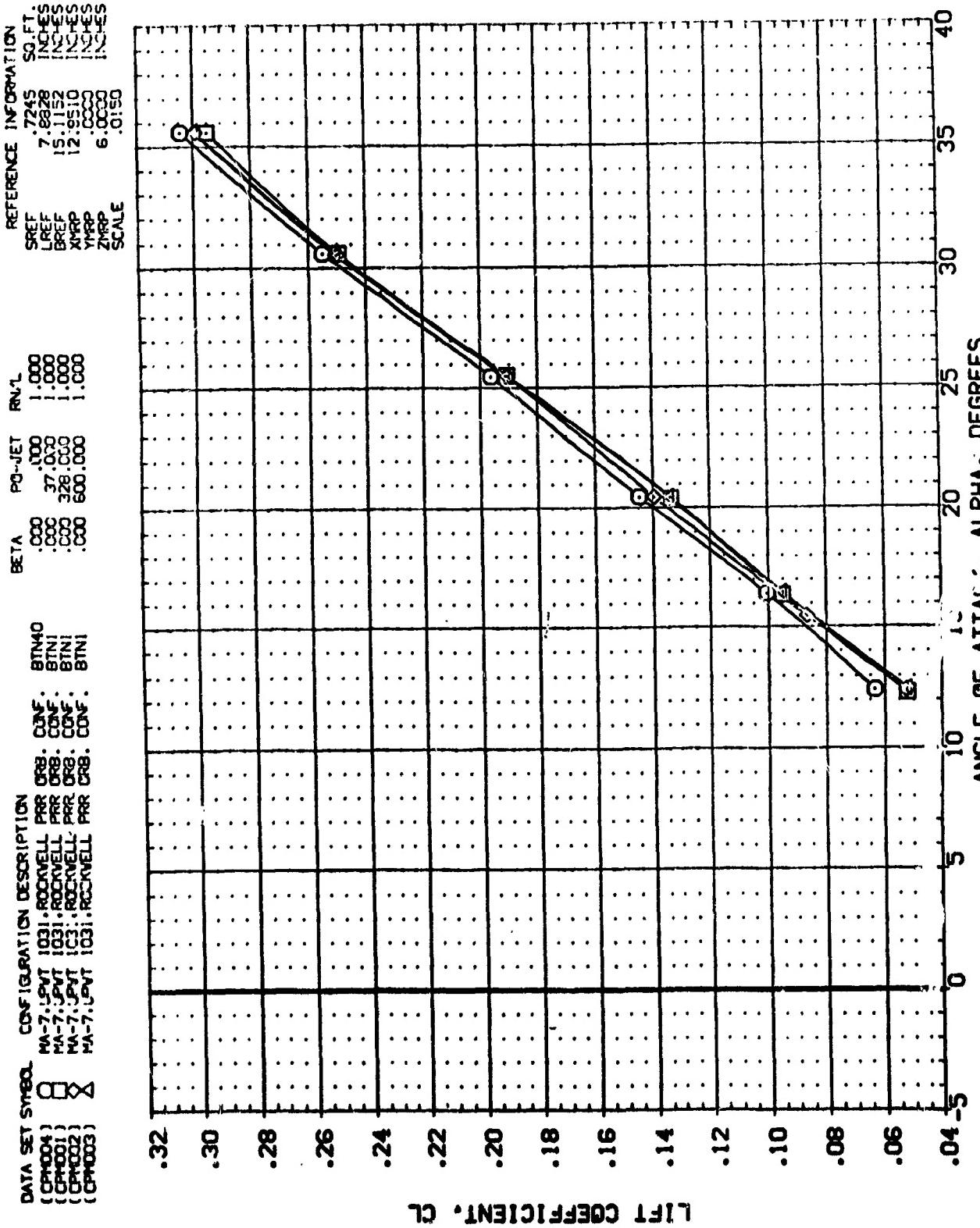
(CPM004)	□	MA-7, UPVT 1031, ROCKWELL PRR ORB, CONF.
(CPM001)	□	MA-7, UPVT 1031, ROCKWELL PRR ORB, CONF.
(CPM002)	△	MA-7, UPVT 1031, ROCKWELL PRR ORB, CONF.
(CPM003)	×	MA-7, UPVT 1031, ROCKWELL PRR ORB, CONF.

REFERENCE INFORMATION  
 SREF .7245 SO. FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF 6.0000 INCHES  
 ZREF .0150 INCHES  
 SCALE



EFFECT OF YAW JET PRESSURE WITH WING OFF  
 $(\Delta MACH) = 4.00$

DATA SET SYMBOL      CONFIGURATION DESCRIPTION      CONF:      BTN40  
 (CPH004)      MA-7-JET 1031. ROCKWELL PRR DRB.      CONF:      BTN1  
 (CPH001)      MA-7-JET 1031. ROCKWELL PRR DRB.      CONF:      BTN1  
 (CPH002)      MA-7-JET 1C3. ROCKWELL PRR DRB.      CONF:      BTN1  
 (CPH003)      MA-7-JET 1031. ROCKWELL PRR DRB.      CONF:      BTN1



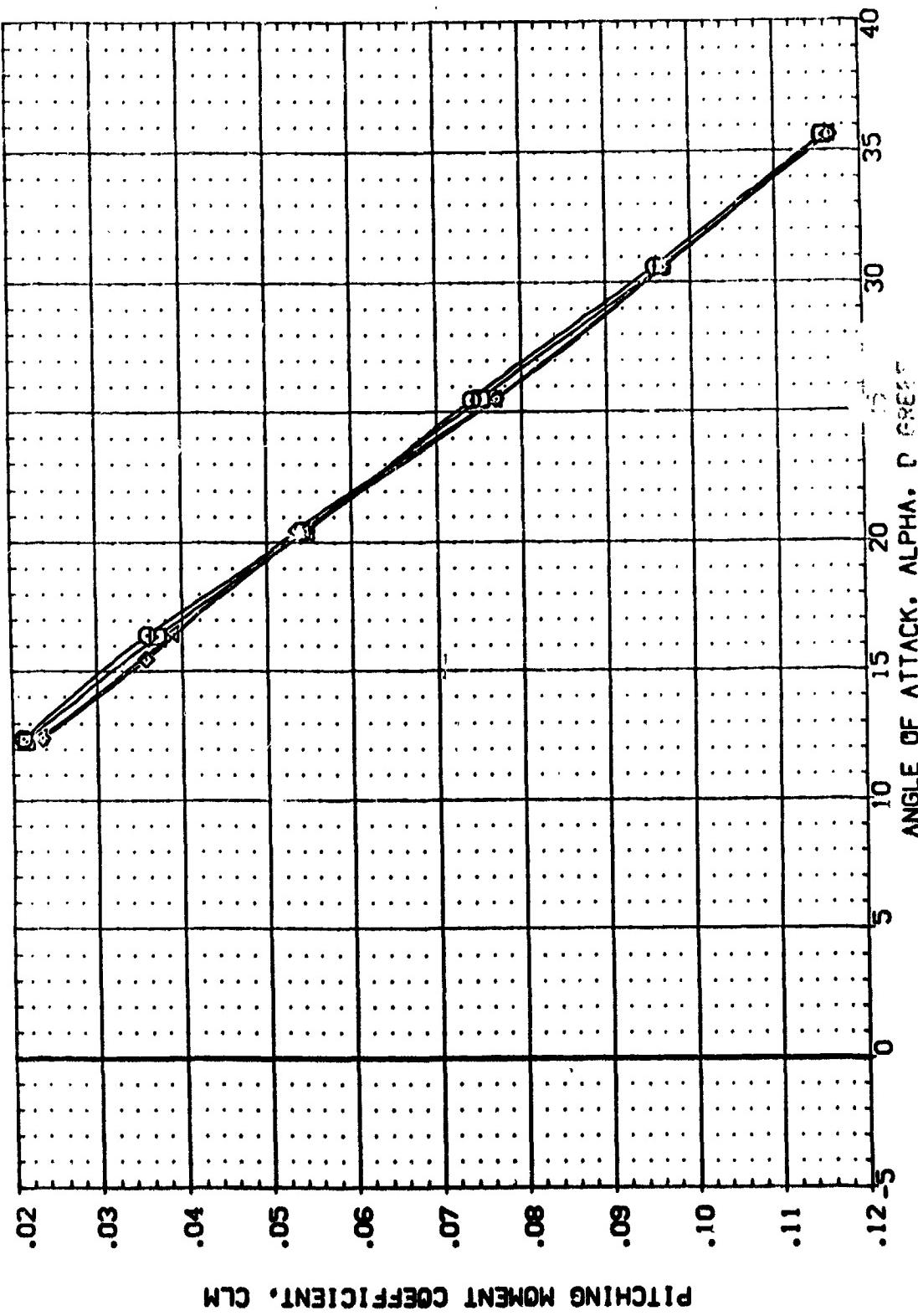
EFFECT OF YAW JET PRESSURE WITH WING OFF  
 $V_{MACH} = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(DP-004)	□	MA-7. UPWT 1031. ROCKWELL PRR	DRB. CONF.	BTM40
(DP-001)	○	MA-7. UPWT 1031. ROCKWELL PRR	CRB. CONF.	BTN1
(DP-002)	×	MA-7. UPWT 1031. ROCKWELL PRR	CRF. CONF.	BTN1
(DP-003)	×	MA-7. UPWT 1031. ROCKWELL PRR	CR3. CONF.	BTN1

REFERENCE INFORMATION

SREF	.7245	SQ.FT.
LREF	.78828	INCHES
BREF	15.1152	INCHES
X-CP	12.9510	INCHES
Y-CP	.0300	INCHES
Z-CP	6.0000	INCHES
SCALE	.0150	



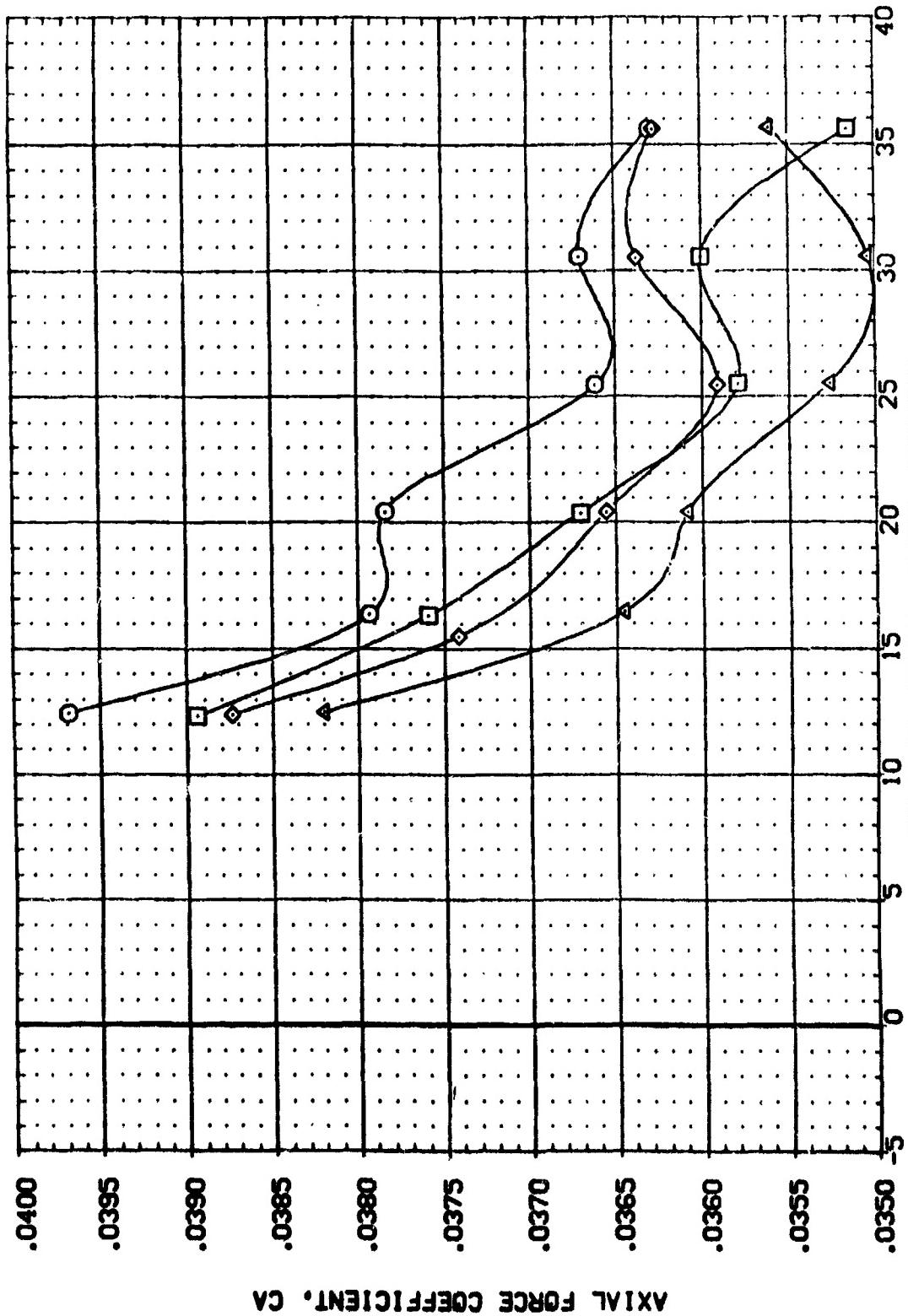
EFFECT OF YAW JET PRESSURE WITH WING OFF  
 $(\Delta) MACH = 4.00$

DATA SET SPEED CONFIGURATION DESCRIPTION

(C1004)	MA-7. UPN	1031. ROCKWELL	CONF. DFB.	CONF. BTM40
(C1001)	MA-7. UPN	1031. ROCKWELL	CONF. DFB.	CONF. BTNI
(C1002)	MA-7. UPN	1031. ROCKWELL	CONF. DFB.	CONF. BTNI
(C1003)	MA-7. UPN	1031. ROCKWELL	CONF. DFB.	CONF. BTNI

REFERENCE INFORMATION

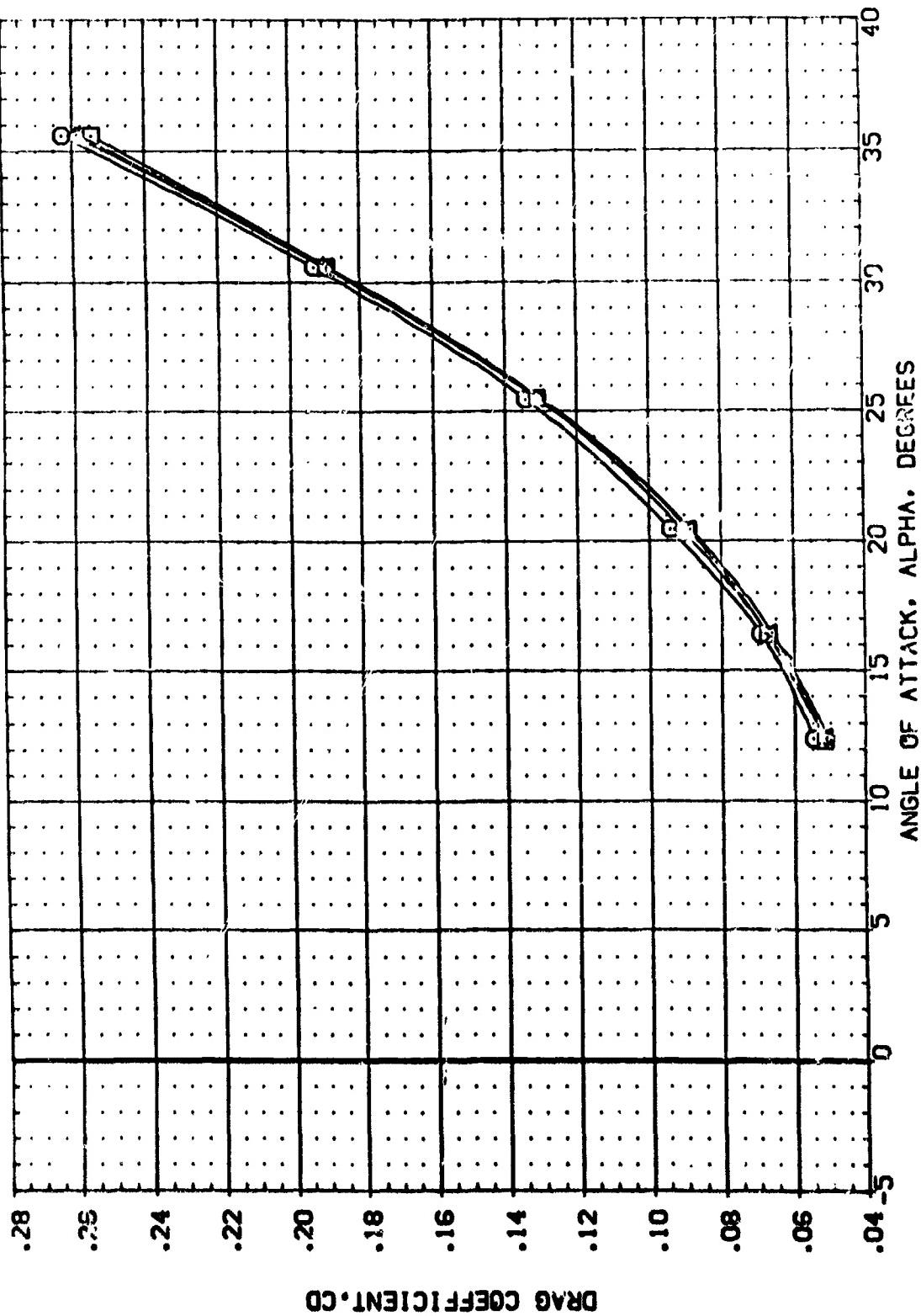
SREF	.7245	CD, FT.
LREF	.8828	INCHES
BREF	15.1152	INCHES
XRP	12.9510	INCHES
YRP	6.0000	INCHES
ZRP	.0150	SCALE



EFFECT OF YAW JET PRESSURE WITH WING OFF  
(MACH = 4.00)

DATA SET SNAME CONFIGURATION DESCRIPTION BTM40  
 (CPM004) MA-7, UPNT 1031, ROCKWELL PNR C08, C09, C08, C09  
 (CPM001) MA-7, UPNT 1031, ROCKWELL PNR C08, C09, C08, C09  
 (CPM002) MA-7, UPNT 1031, ROCKWELL PNR C08, C09, C08, C09  
 (CPM003) MA-7, UPNT 1031, ROCKWELL PNR C08, C09, C08, C09

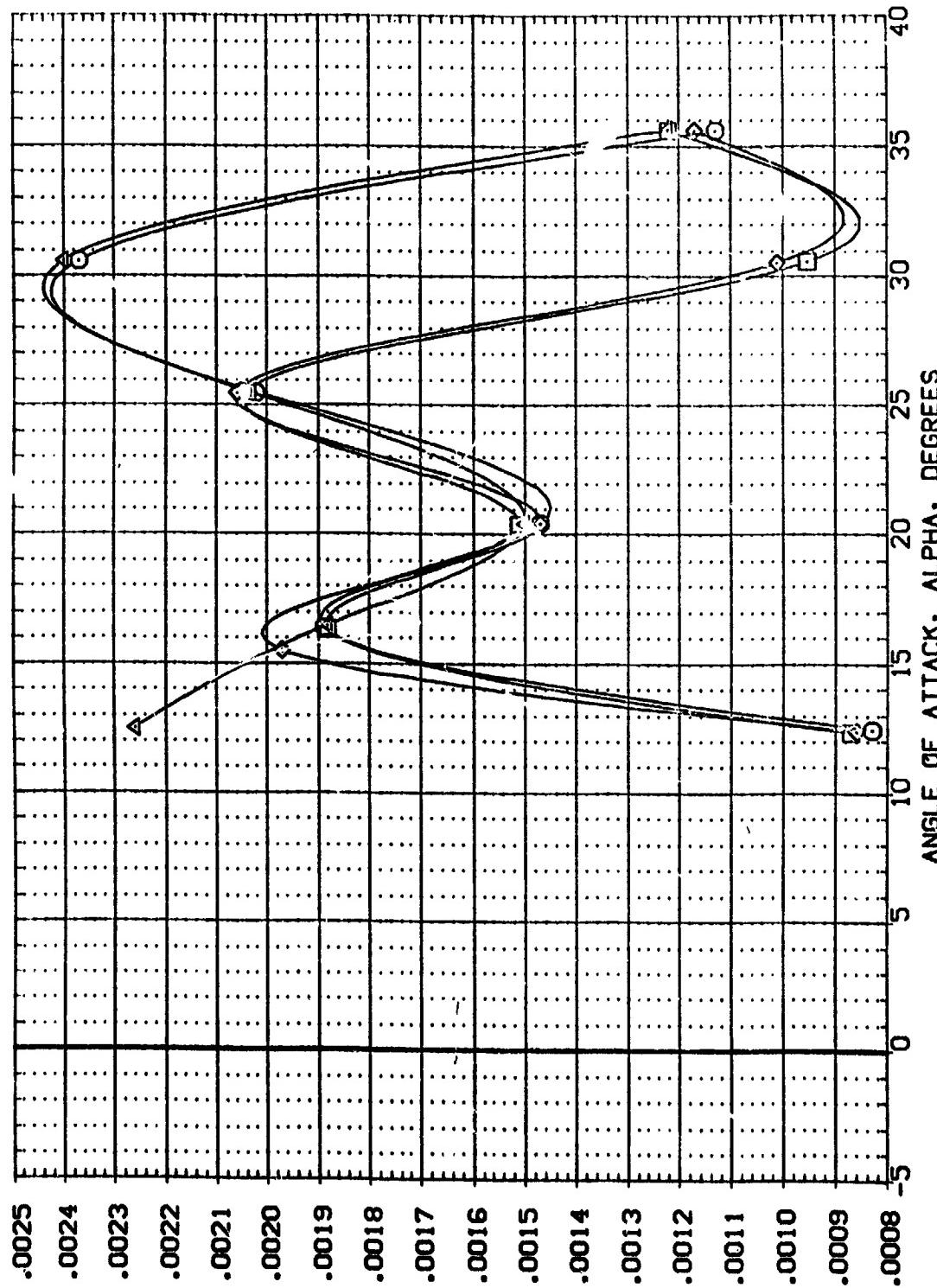
REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8878 INCHES  
 BREF 15.1152 INCHES  
 XRP 12.3510 INCHES  
 YRP 6.0000 INCHES  
 ZRP .0150 INCHES



EFFECT OF YAW JET PRESSURE WITH WING OFF  
 $(\Delta MACH = 4.00)$

DATA SET NAME: CONFIGURATION DESCRIPTION  
 CPM004 MA-7, UPNT 1031, PCKWELL PRR ORB. CONF.  
 (CPM001) MA-7, UPNT 1031, PCKWELL PRR ORB. CONF.  
 (CPM002) MA-7, UPNT 1031, PCKWELL PRR ORB. CONF.  
 (CPM003) MA-7, UPNT 1031, PCKWELL PRR ORB. CONF.

REFERENCE INFORMATION  
 SREF 7245 SQ. FT.  
 LREF 7.8828 INCHES  
 GREF 15.152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP 0.0000 INCHES  
 SCALE .0150



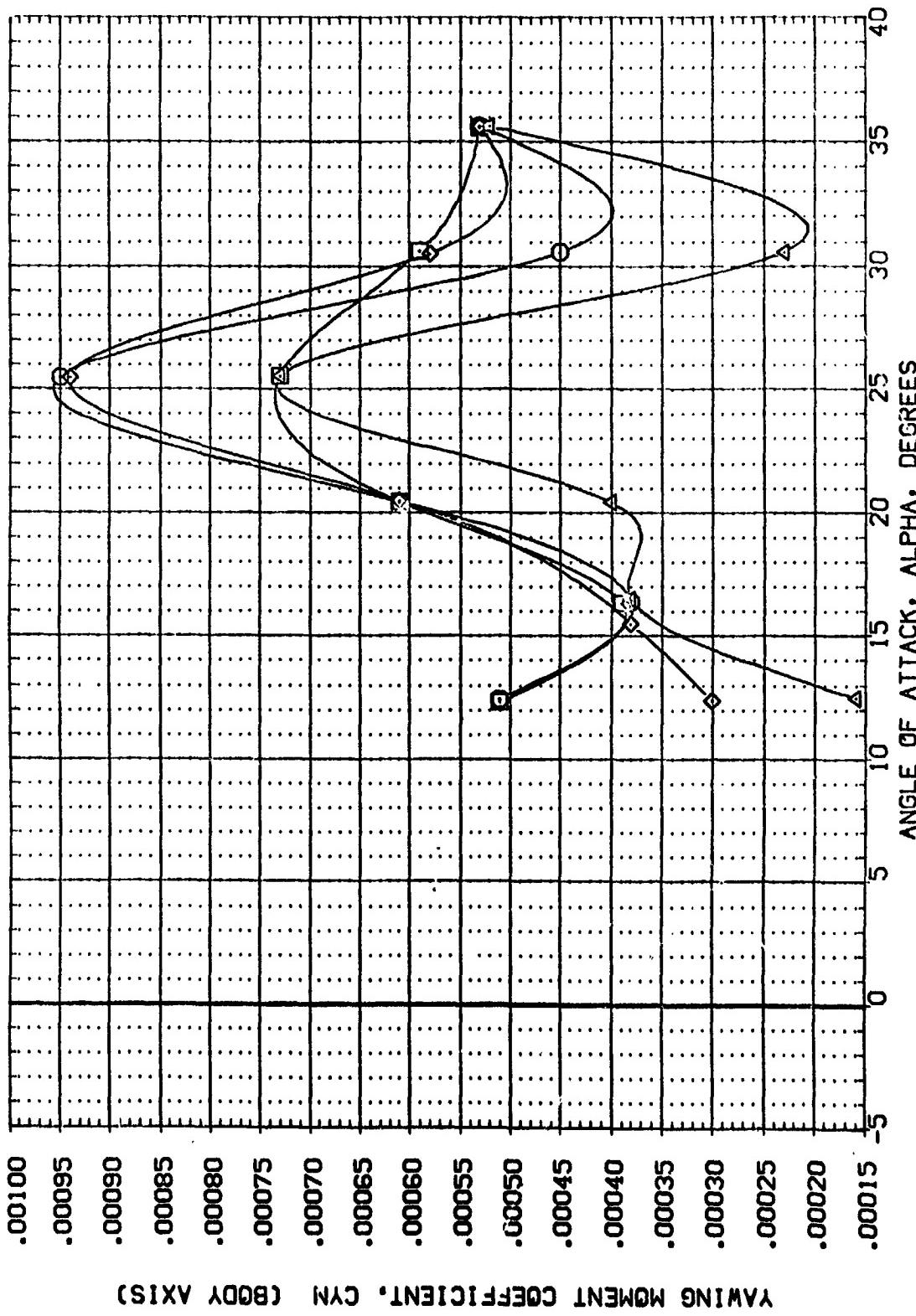
SIDE FORCE COEFFICIENT, C<sub>y</sub>

EFFECT OF YAW JET PRESSURE WITH WING OFF

$$TAU_MACH = -4.00$$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CPH004) MA-7-UPVT 1031-ROCKWELL PRR ORB. CONF.: BTM40  
 (CPH001) MA-7-UPVT 1031-ROCKWELL PRR ORB. CONF.: B7N1  
 (CPH002) MA-7-UPVT 1031-ROCKWELL PRR ORB. CONF.: B7N1  
 (CPH003) MA-7-UPVT 1031-ROCKWELL PRR ORB. CONF.: B7N1

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.5510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0000 INCHES  
 SCALE .0150



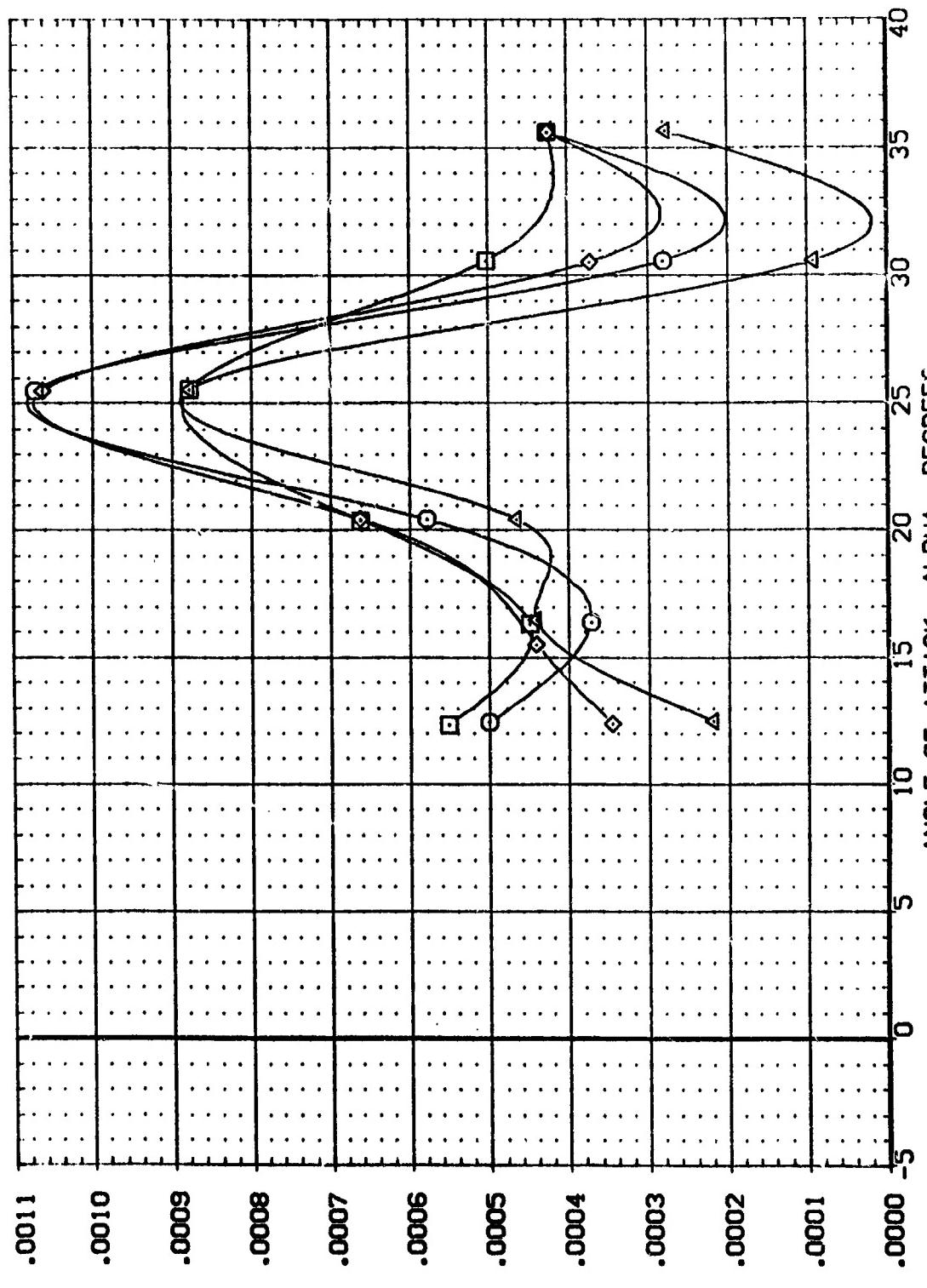
EFFECT OF YAW JET PRESSURE WITH WING OFF  
 CJMACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

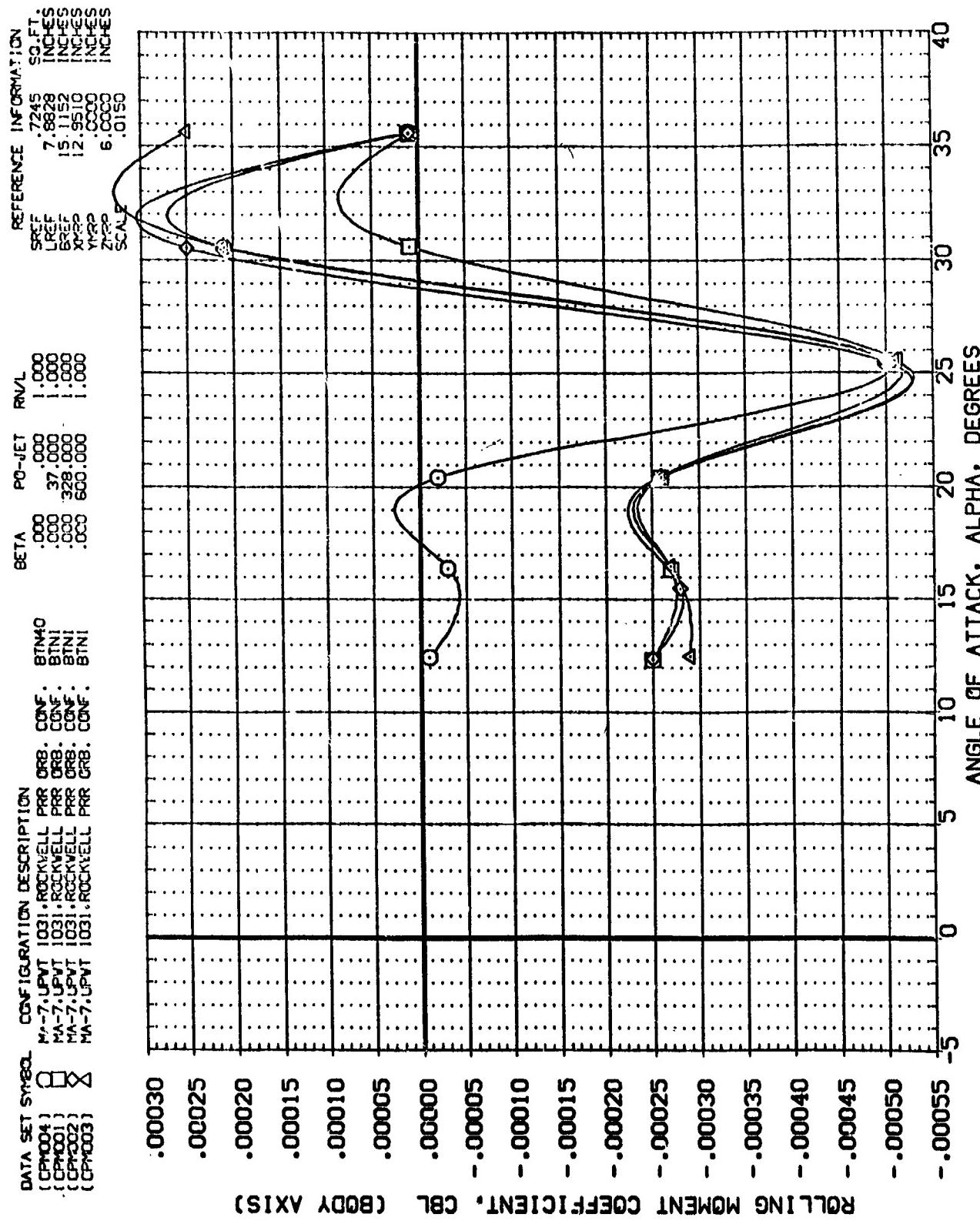
(DP004)	□	MA-7.JPT	1031.ROCKWELL	PRR	DRB.	CONF.	BTN40
(DP001)	□	MA-7.JPT	1031.ROCKWELL	PRR	DRB.	CONF.	BTNI
(DP002)	X	MA-7.JPT	1031.ROCKWELL	PRR	DRB.	CONF.	BTNI
(DP033)	X	MA-7.JPT	1031.ROCKWELL	PRR	DRB.	CONF.	BTNI

REFERENCE INFORMATION  
 SREF .725 INCHES  
 LREF 7.88 INCHES  
 BREF 15.152 INCHES  
 XRP 12.953 COORD.  
 YRP 6.033 COORD.  
 ZRP 6.033 COORD.

SCALE



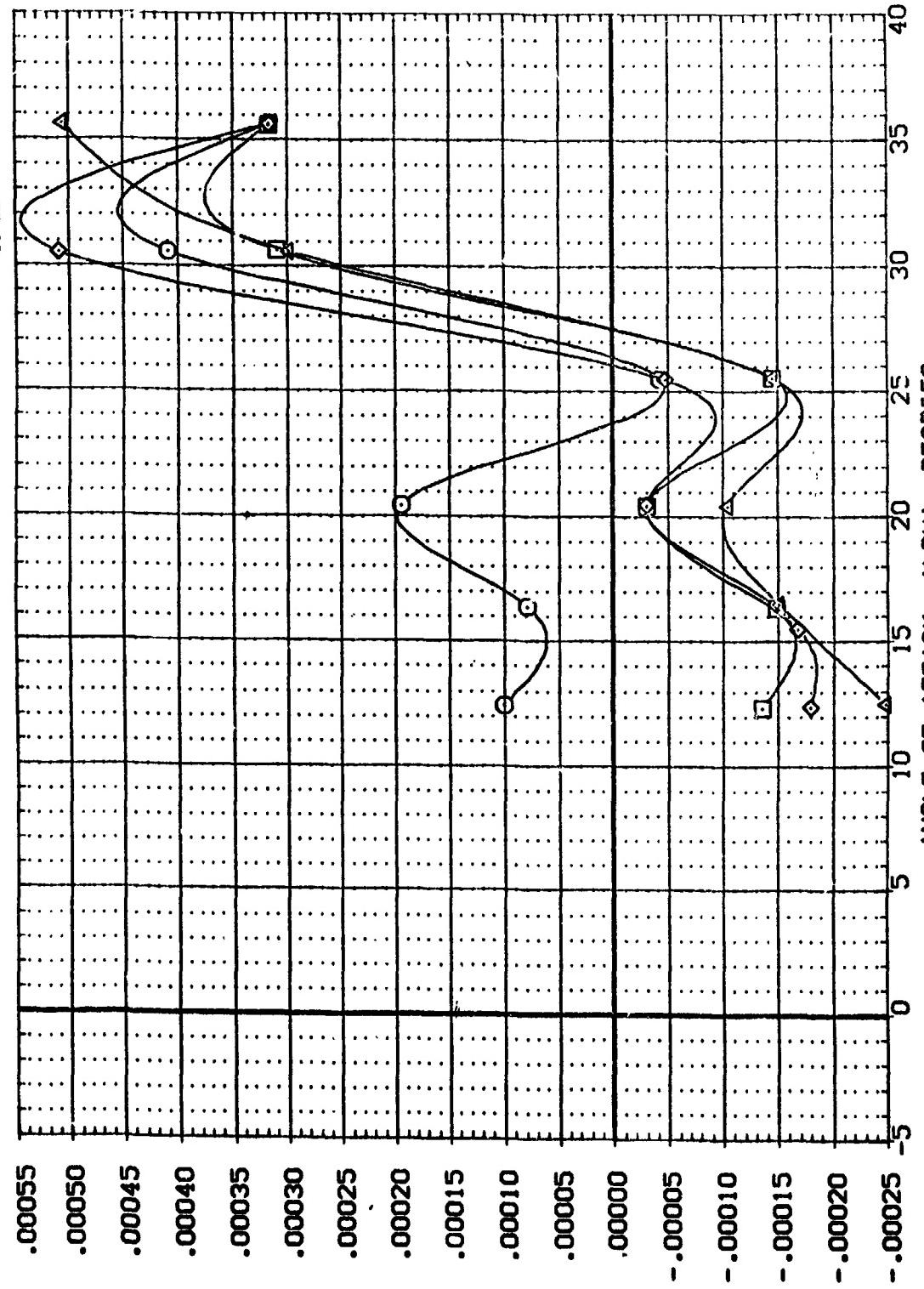
EFFECT OF YAW JET PRESSURE WITH WING OFF  
 $(\Delta MACH = 4.00)$



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CPM004)	□	MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF:
(CPM001)	○	MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF:
(CPM002)	×	MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF:
(CPM003)	×	MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF:

REFERENCE INFORMATION  
 SREF .7245 SO. FT.  
 LREF 7.8928 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP 6.0000 INCHES  
 ZMRP .0150 SCALE

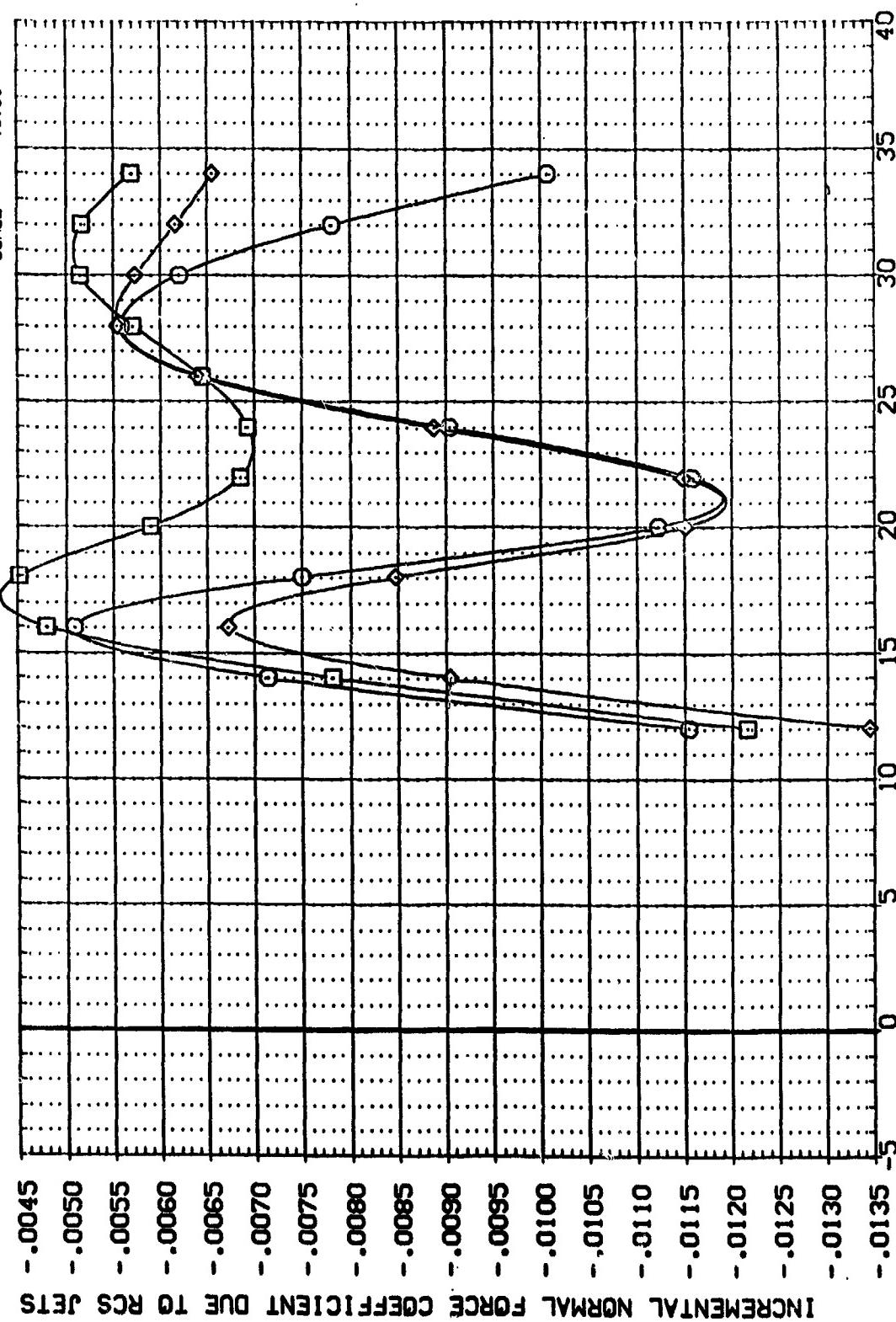


ROLLING MOMENT COEFFICIENT, CSL, (STABILITY AXIS)

EFFECT OF YAW JET PRESSURE WITH WING OFF  
 $(\Delta MACH = 4.00)$

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APR001) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF. BTNI  
 (APR002) MA-7, UPVT 1031, ROCKWELL PRR ORB. CONF. BTNI  
 (APR003) MA-7, UPVT 1031, ROCKWELL FRR ORB. CONF. BTNI

REFERENCE INFORMATION  
 SRCP 7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP .000000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150



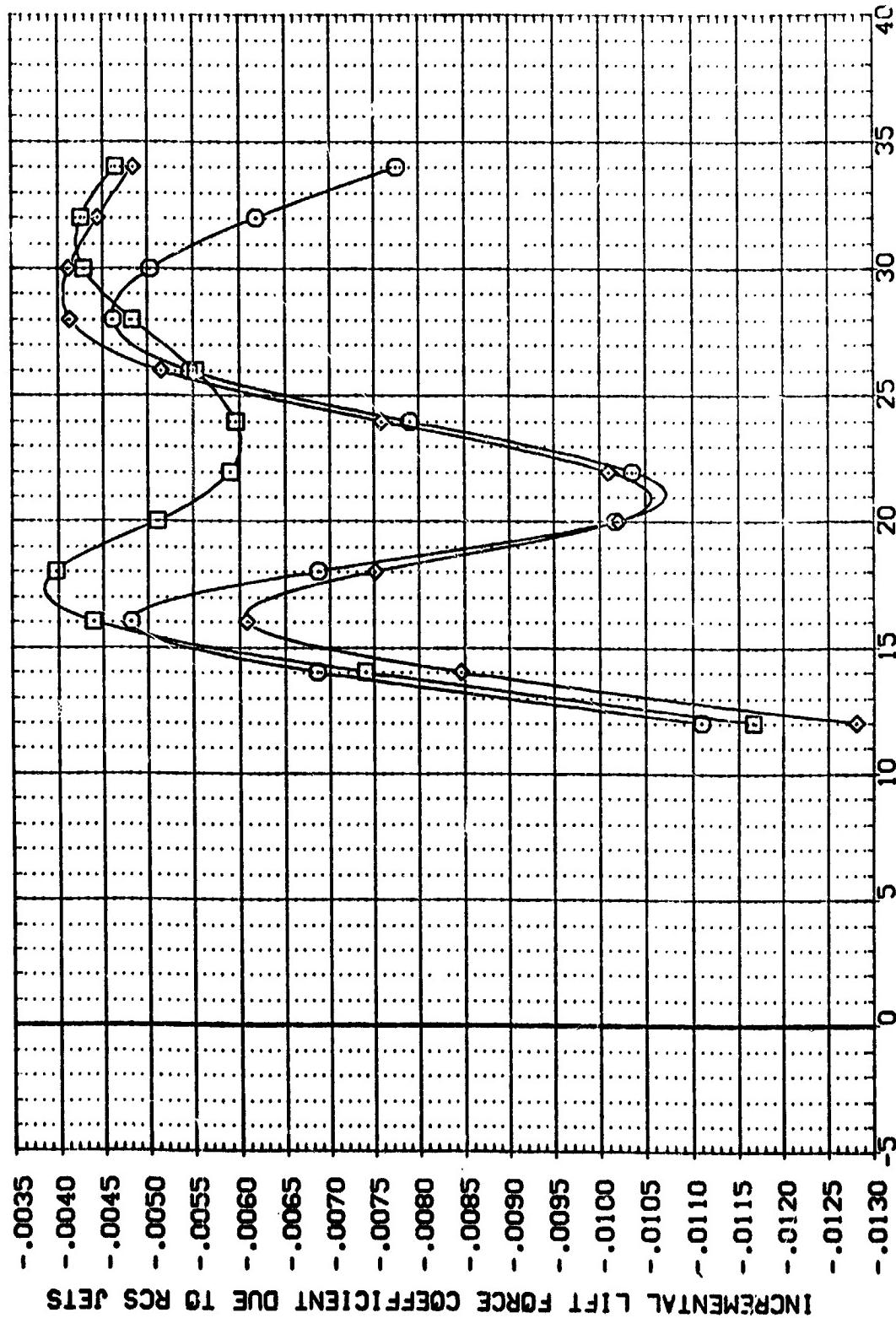
YAW JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)  
 $(\text{MACH}) = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APR001)	□	MA-7, UPVT
(APR002)	○	1031, ROCKWELL PRR ORB. CONF.
(APR003)	◊	MA-7, UPVT
(APC001)	◊	1031, ROCKWELL PRR ORB. CONF.
(APC002)	○	1031, ROCKWELL PRR ORB. CONF.
(APC003)	□	1031, ROCKWELL PRR ORB. CONF.

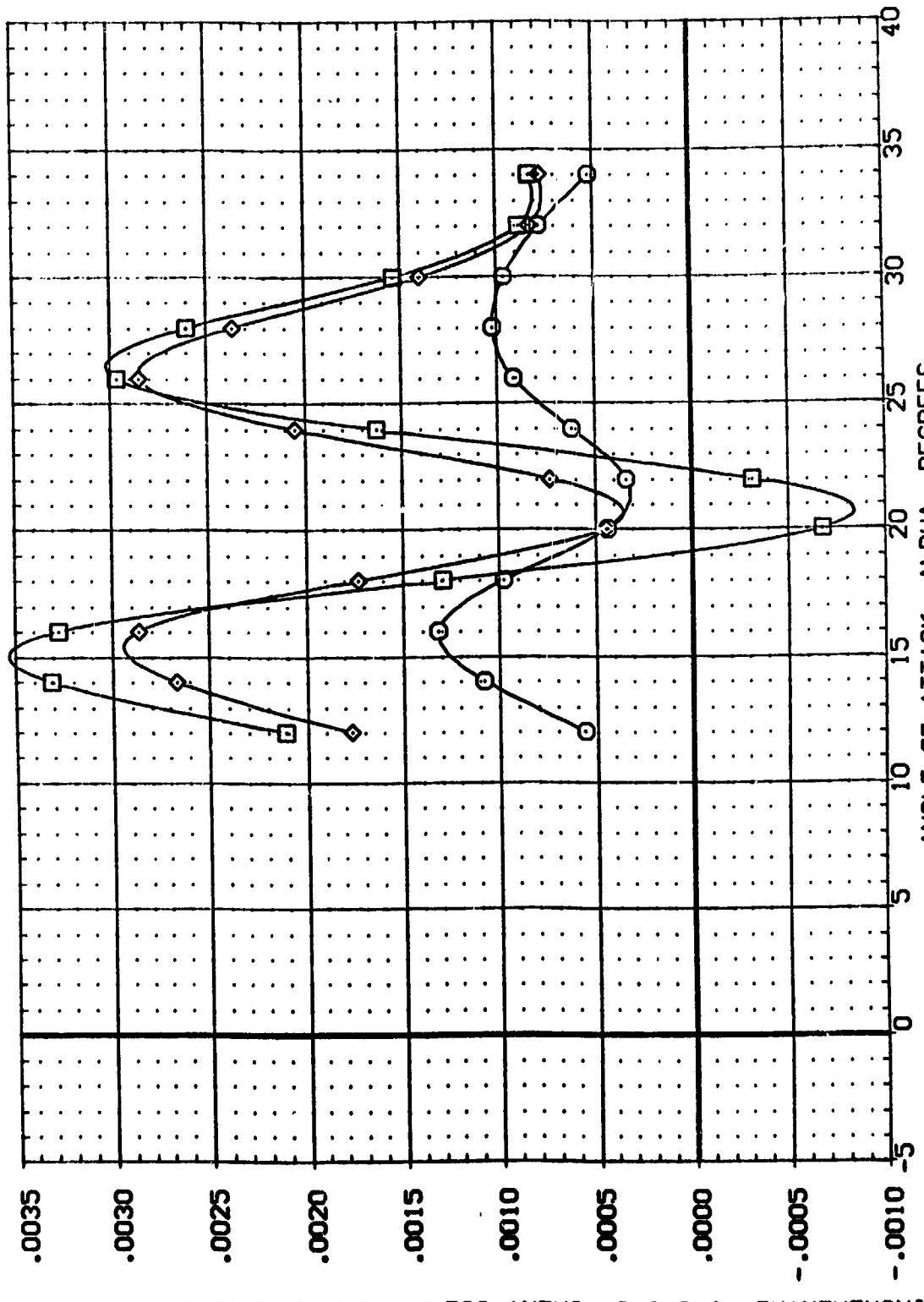
REFERENCE INFORMATION

SREF	.7245 SC. FT.
LREF	.78828 INCHES
BREF	.15.1152 INCHES
XMRP	.12.9510 INCHES
YMRP	.6.0000 INCHES
ZMRP	.0150 INCHES
SCALE	



DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APM001) MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF.: BTN1  
 (APM002) MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF.: BTN1  
 (APM003) MA-7, UPNT 1031, ROCKWELL PRR GRB. CONF.: BTN1

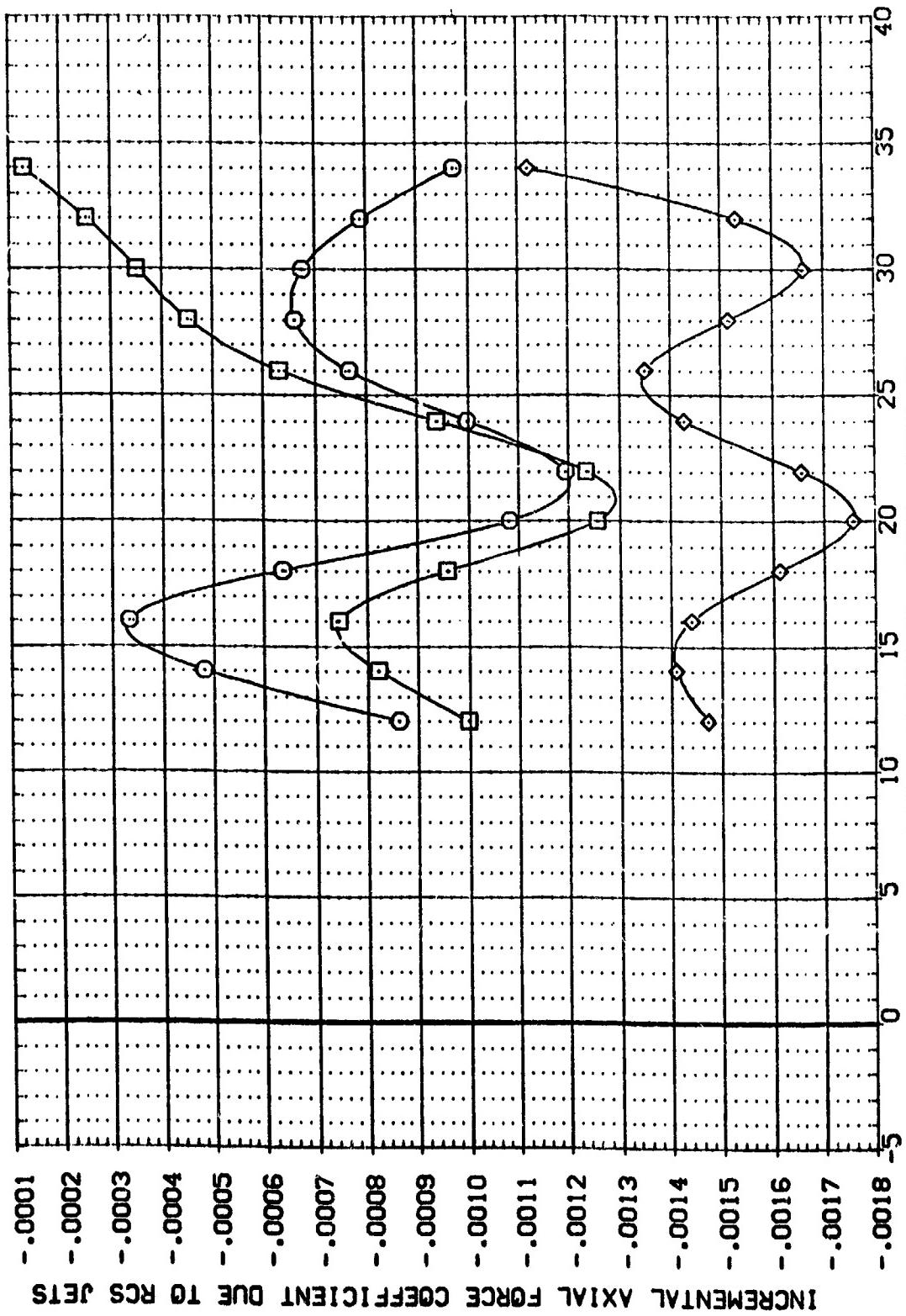
REFERENCE INFORMATION  
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 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF .0000 INCHES  
 ZREF 6.0150 INCHES  
 SCALE



YAW JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)  
 (A)MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION BN1 BN1 BN1 BN1  
 (APR001) MA-7, UPN 1031, ROCKWELL PRR ORB. CONF.  
 (APR002) MA-7, UPN 1031, ROCKWELL PRR ORB. CONF.  
 (APR003) MA-7, UPN 1031, ROCKWELL PRR ORB. CONF.

REFERENCE INFORMATION	
SREF	.7245 SQ. FT.
LREF	.7828 INCHES
BREF	15.1152 INCHES
XRP	12.9510 INCHES
YMRP	6.0000 INCHES
ZMRP	.0000 INCHES
SCALE	.350



YAW JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)

(MACH = 4.00

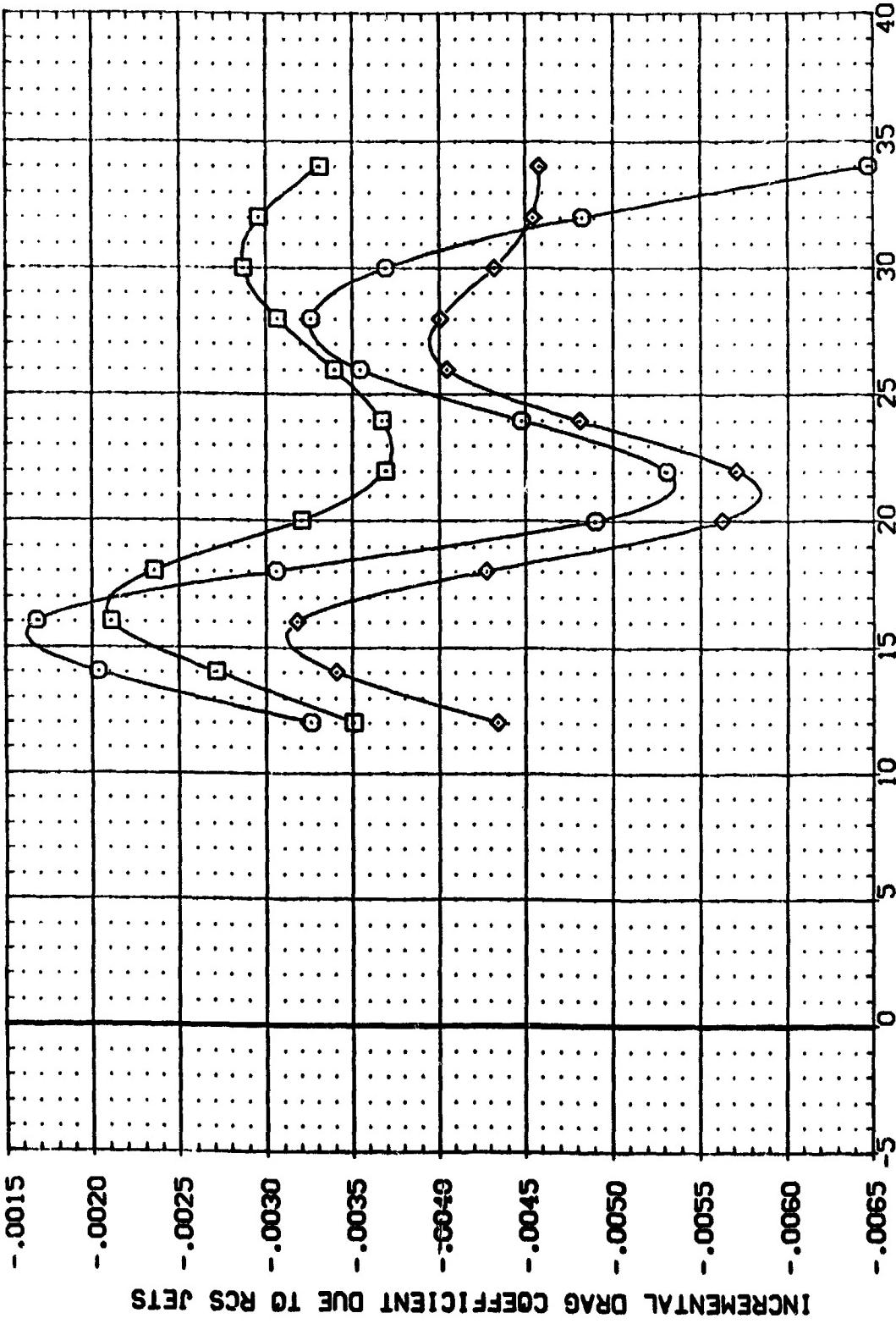
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DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APR001)	□	MA-7, UPN 1031, ROCKWELL PRB, CONF: B1N1
(APR002)	○	MA-7, UPN 1031, ROCKWELL PRB, CONF: B1N1
(APR003)	◊	MA-7, UPN 1031, ROCKWELL PRB, CONF: B1N1

REFERENCE INFORMATION

SREF	.7245	SQ.FT.
LREF	.8828	INCHES
SREF	15.1152	INCHES
XREF	12.9510	INCHES
YREF	.0000	INCHES
ZREF	6.0000	INCHES
SCALE	.0150	

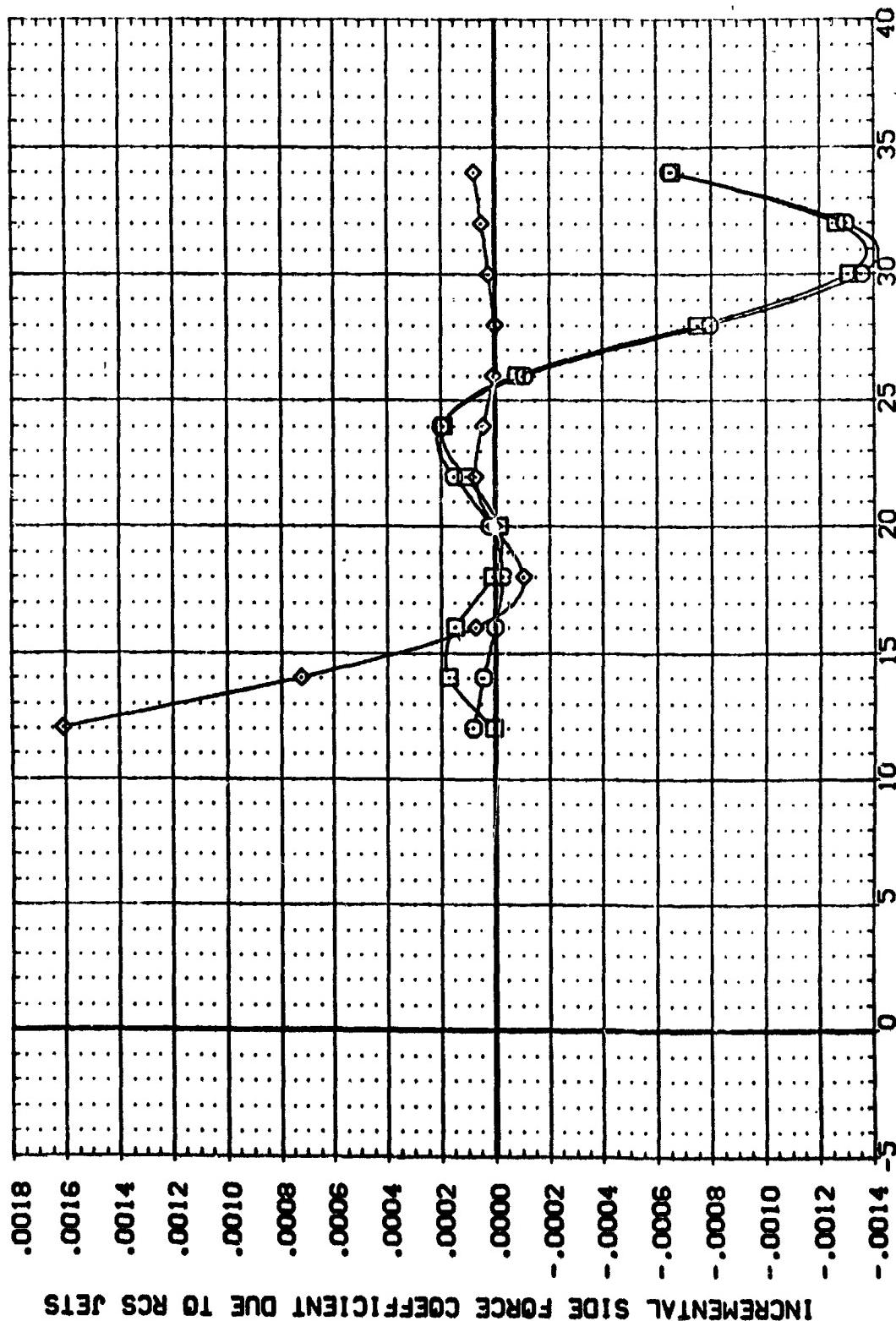


- YAW JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)

C<sub>MACH</sub> = 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION
[APD001]	NA-7..UPNT 1031..ROCKWELL PAR C
[APD002]	NA-7..UPNT 1031..ROCKWELL PAR C
[APD003]	NA-7..UPNT 1031..ROCKWELL PAR C

	BETA	DLPO-J	RNL	REFERENCE INFORMATION	SO.FT.	INCHES
.000	37.000	1.000	SREF	.7245		
.000	328.000	1.000	LREF	7.8828		
.000	600.000	1.000	XREF	15.1152		
			YREF	12.9510		
			ZREF	6.0000		
			SCALE	.0150		

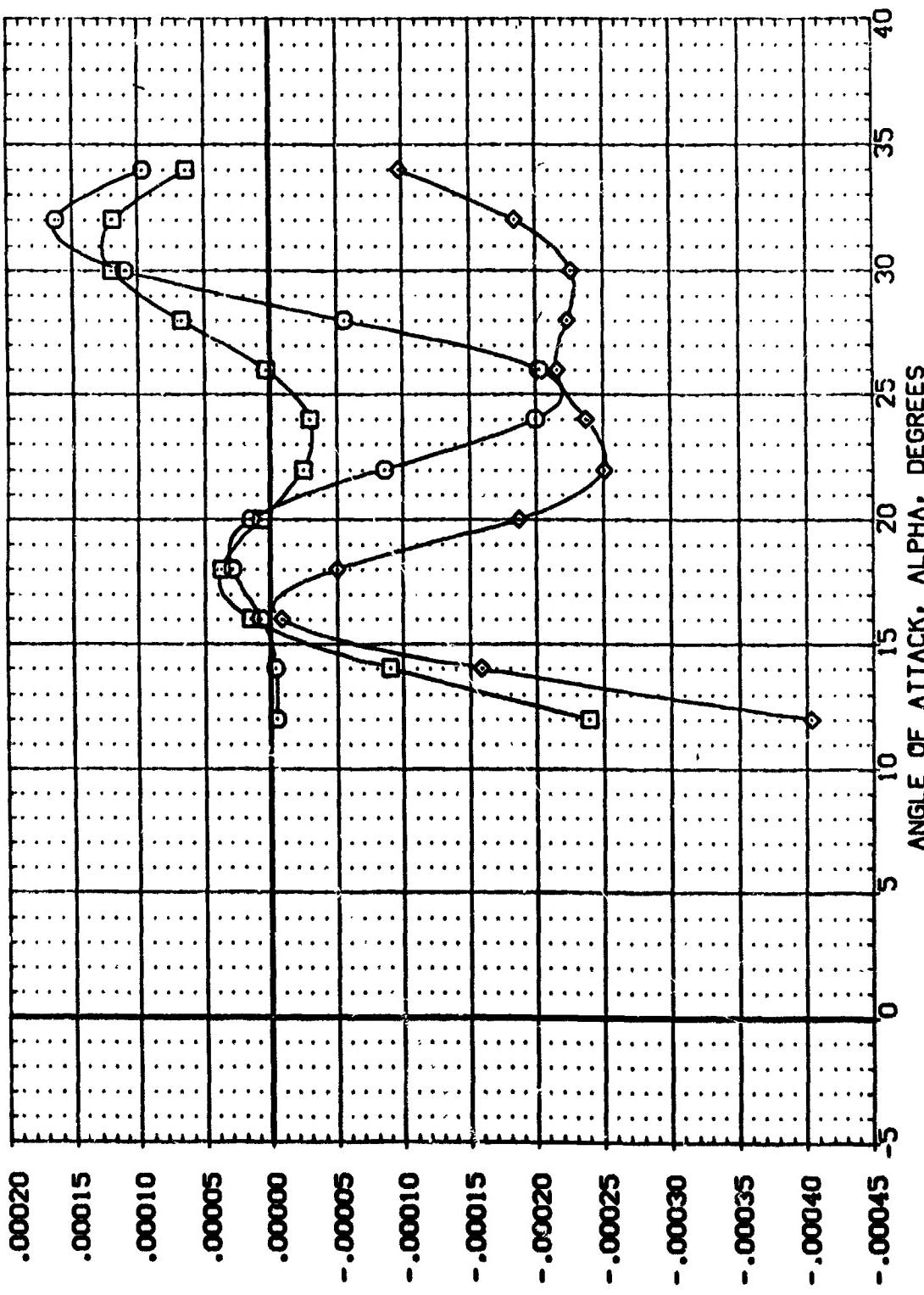


## **YAW JET INTERFERENCE WITH WING GEE (INCREMENTAL DATA)**

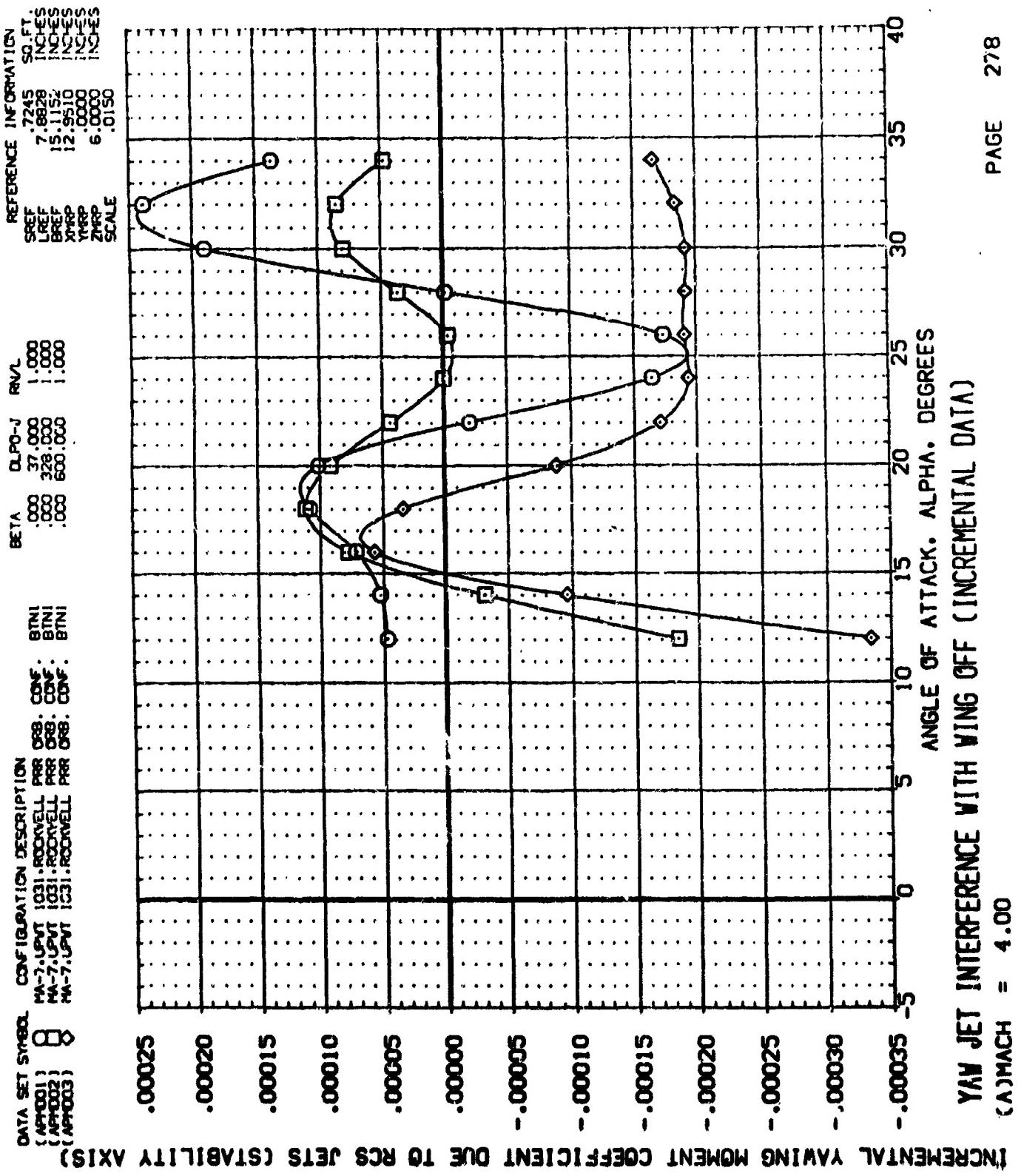
САУНА = 4.00

INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (BODY AXES)

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	D <sub>P0-J</sub>	R <sub>VL</sub>	REFERENCE INFORMATION
(APR001)	MA-7. UPN 1031. ROCKWELL FPR ORB. CONF: BTNI	.000	.37,000	1.000	SREF 7.7245 SQ.FT.
(APR002)	MA-7. UPN 1031. ROCKWELL FPR ORB. CONF: BTNI	.000	.328,000	1.000	LREF 7.8628 INCHES
(APR003)	MA-7. UPN 1031. ROCKWELL FPR ORB. CONF: BTNI	.000	.600,000	1.000	BREF 15.1152 INCHES
				XMRP 12.9510 INCHES	
				YMRP .00000 INCHES	
				ZMRP 6.0000 INCHES	
				SCALE .0150	

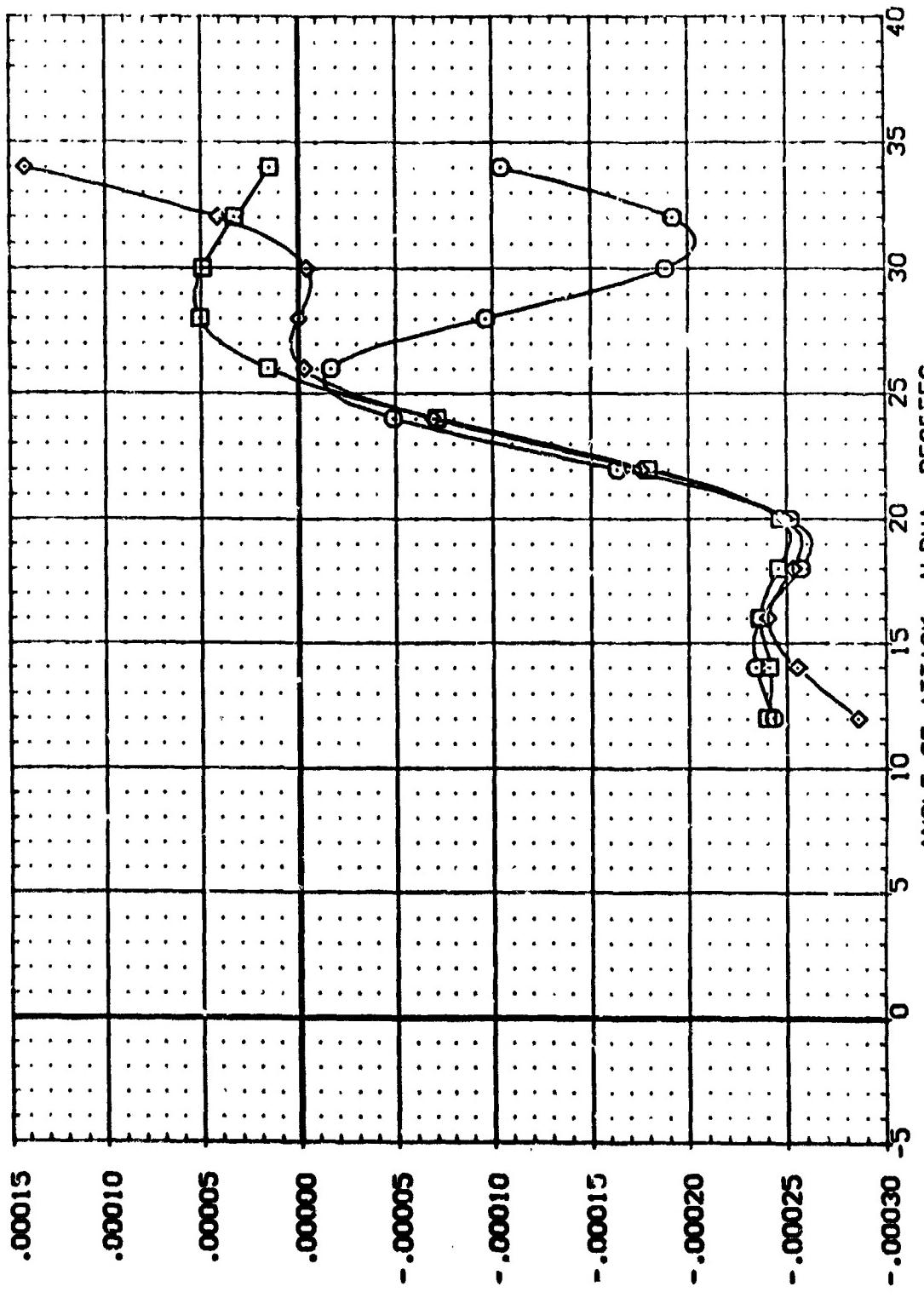


YAW JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)  
(MACH = 4.00)



DATA SET NAME: CONFIGURATION DESCRIPTION: MA-7-JETT 1031-ROCKWELL PAR CONF: BTN1 CONF: BTN1 CONF: BTN1

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.152 INCHES  
 XHPP 12.9510 INCHES  
 YHPP 6.0500 INCHES  
 ZHPP 6.0500 INCHES  
 SCALE .0150



INCREMENTAL ROLLING MOMENT COEFFICIENT CLUE TO RCS JETS (BODY AXIS)

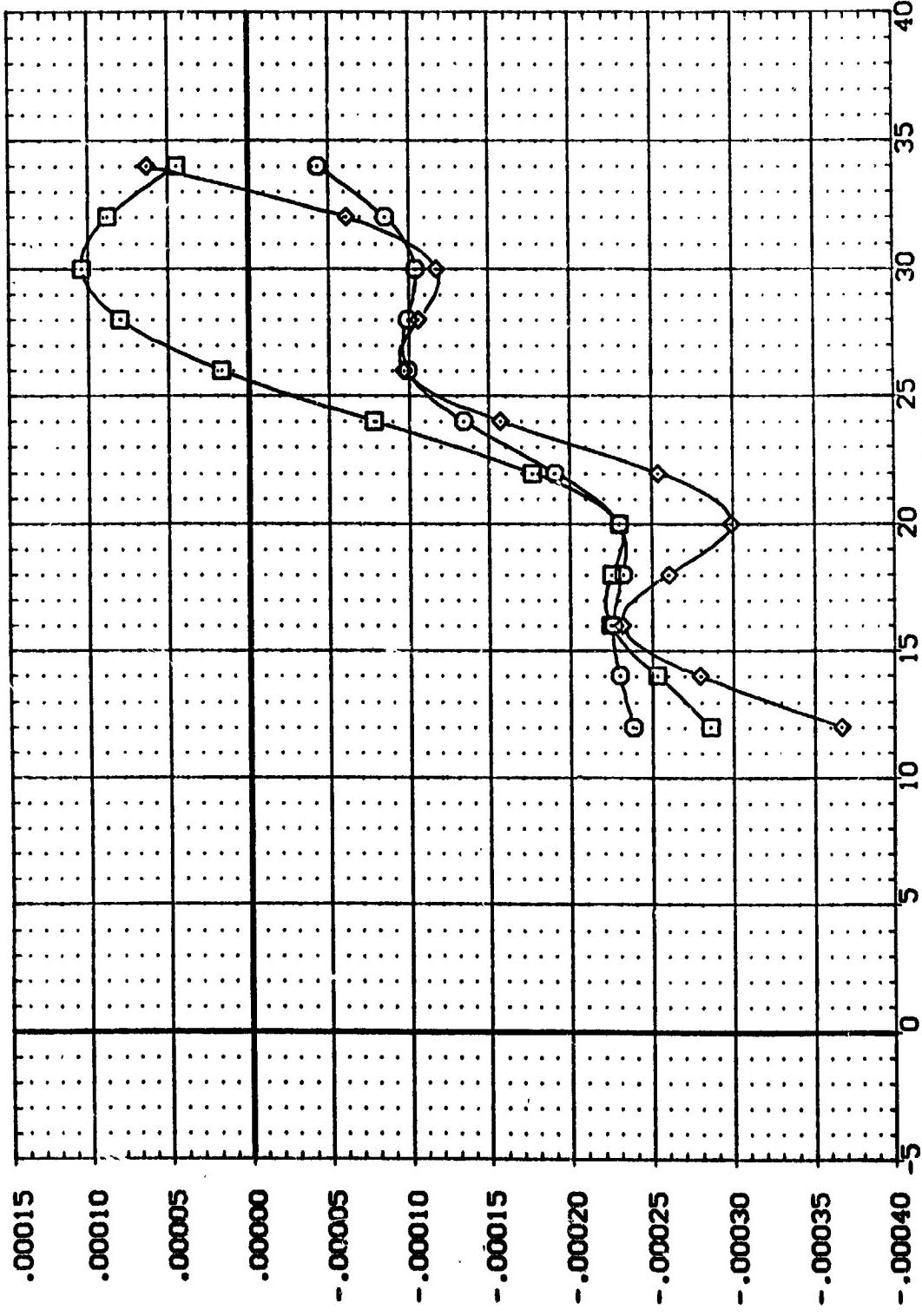
(A)MACH = 4.00

YAW JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)

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DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (APR001) MA-7, UPN 1031, ROCKWELL PRR 089, CONF: BTNI  
 (APR002) MA-7, UPN 1031, ROCKWELL PRR 089, CONF: BTNI  
 (APR003) MA-7, UPN 1031, ROCKWELL PRR 089, CONF: BTNI

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 SREF 15.1152 INCHES  
 XREF 12.8510 INCHES  
 YREF 6.0000 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150

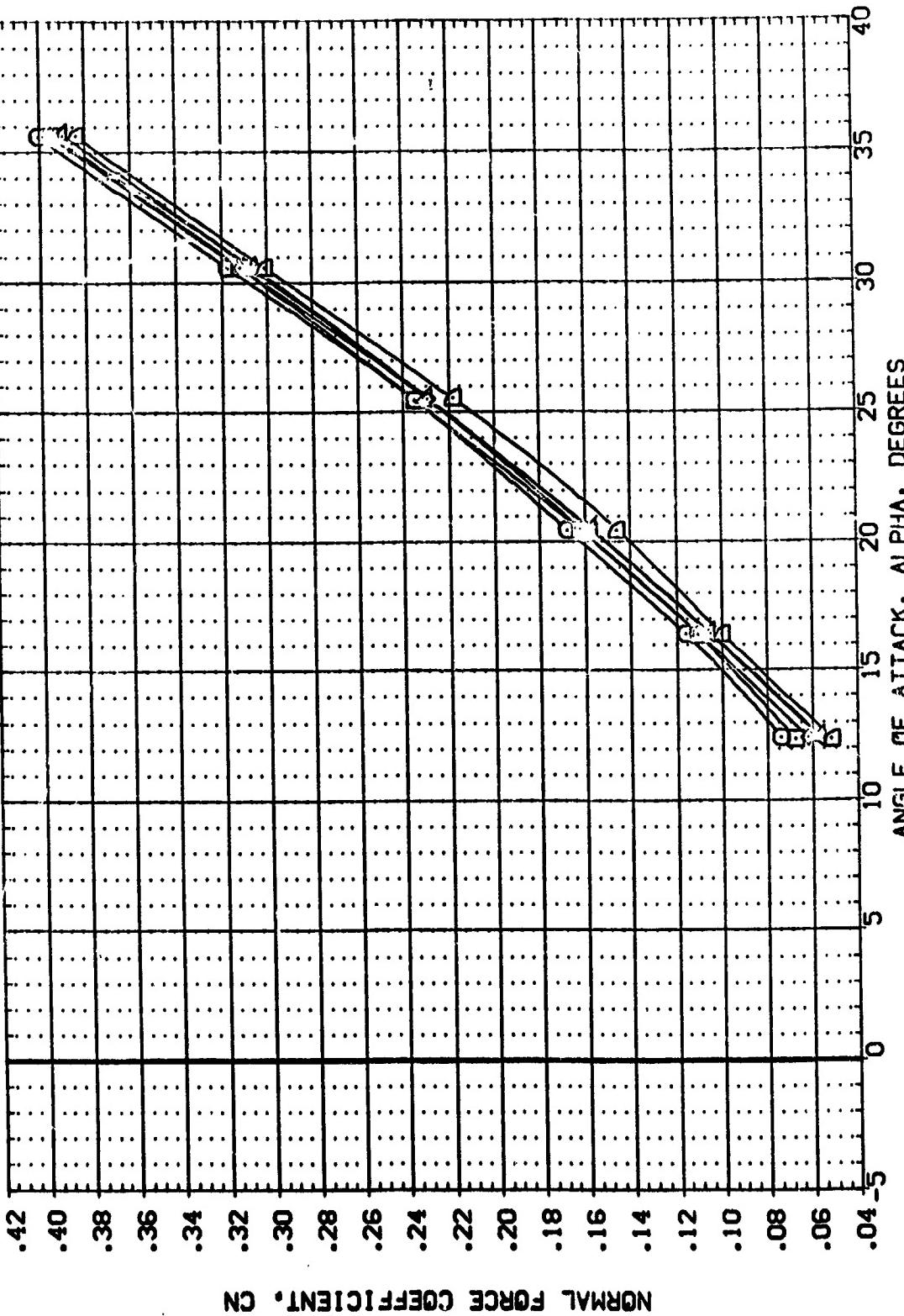


INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS STABILITY AXIS

YAW JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)  
 $(\alpha_{MACH} = 4.00)$

DATA SET NAME: CONFIGURATION DESCRIPTION  
 (CPM004) MA-7, PVT 1031, ROCKWELL PRR, CONF. CTRN40  
 (CPM005) MA-7, PVT 1031, ROCKWELL PRR, CONF. CTRN40  
 (CPM006) MA-7, PVT 1031, ROCKWELL PRR, CONF. CTRN40  
 (CPM007) MA-7, PVT 1031, ROCK-EEL PRR, CONF. CTRN40  
 (CPM008) MA-7, PVT 1031, ROCKWELL PRR, CONF. CTRN40  
 (CPM009) MA-7, PVT 1031, ROCKWELL PRR, CONF. CTRN40

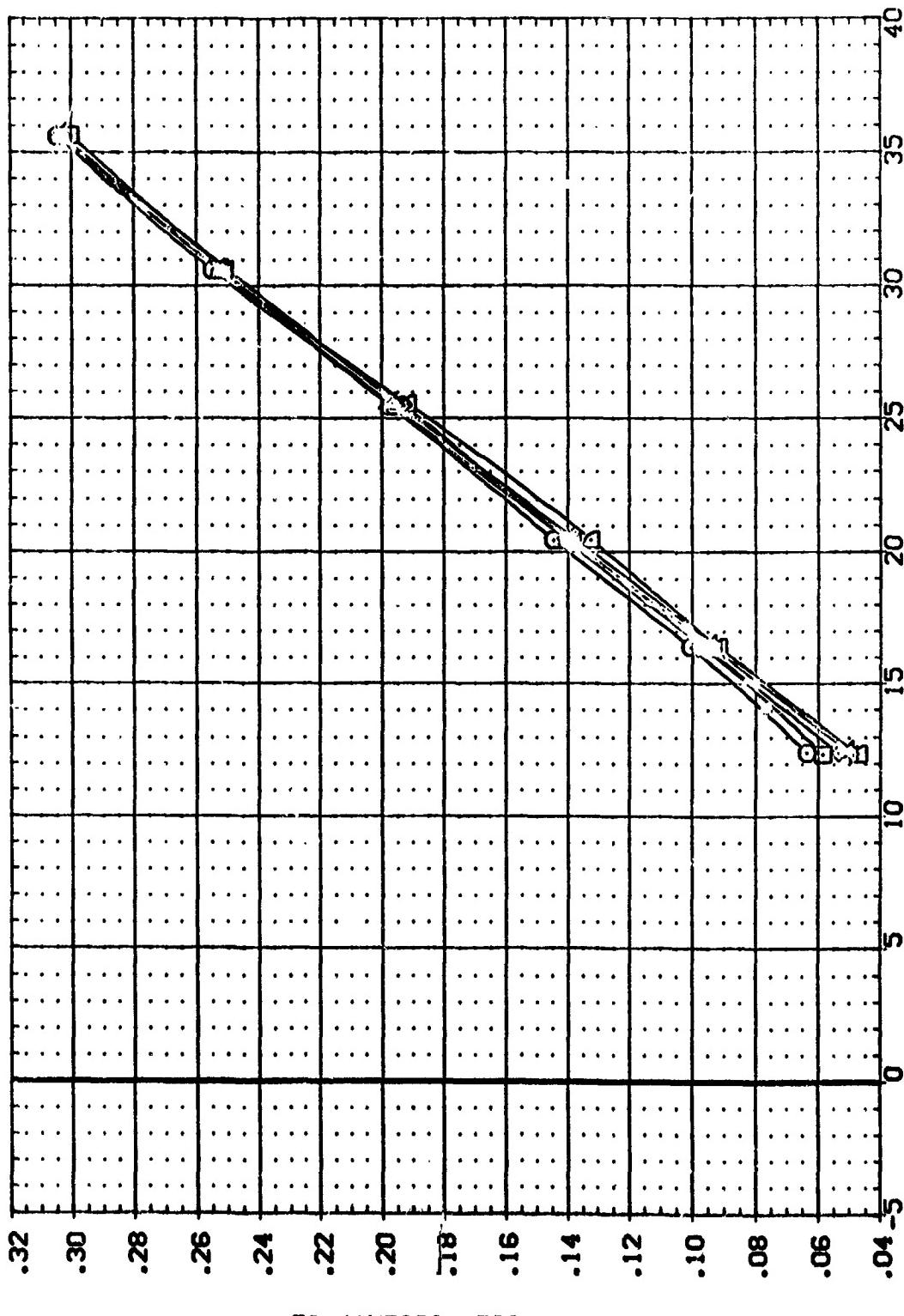
REFERENCE INFORMATION  
 SREF 7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XMRP 12.9510 INCHES  
 YMRP .0000 INCHES  
 ZMRP 6.0000 INCHES  
 SCALE .0150

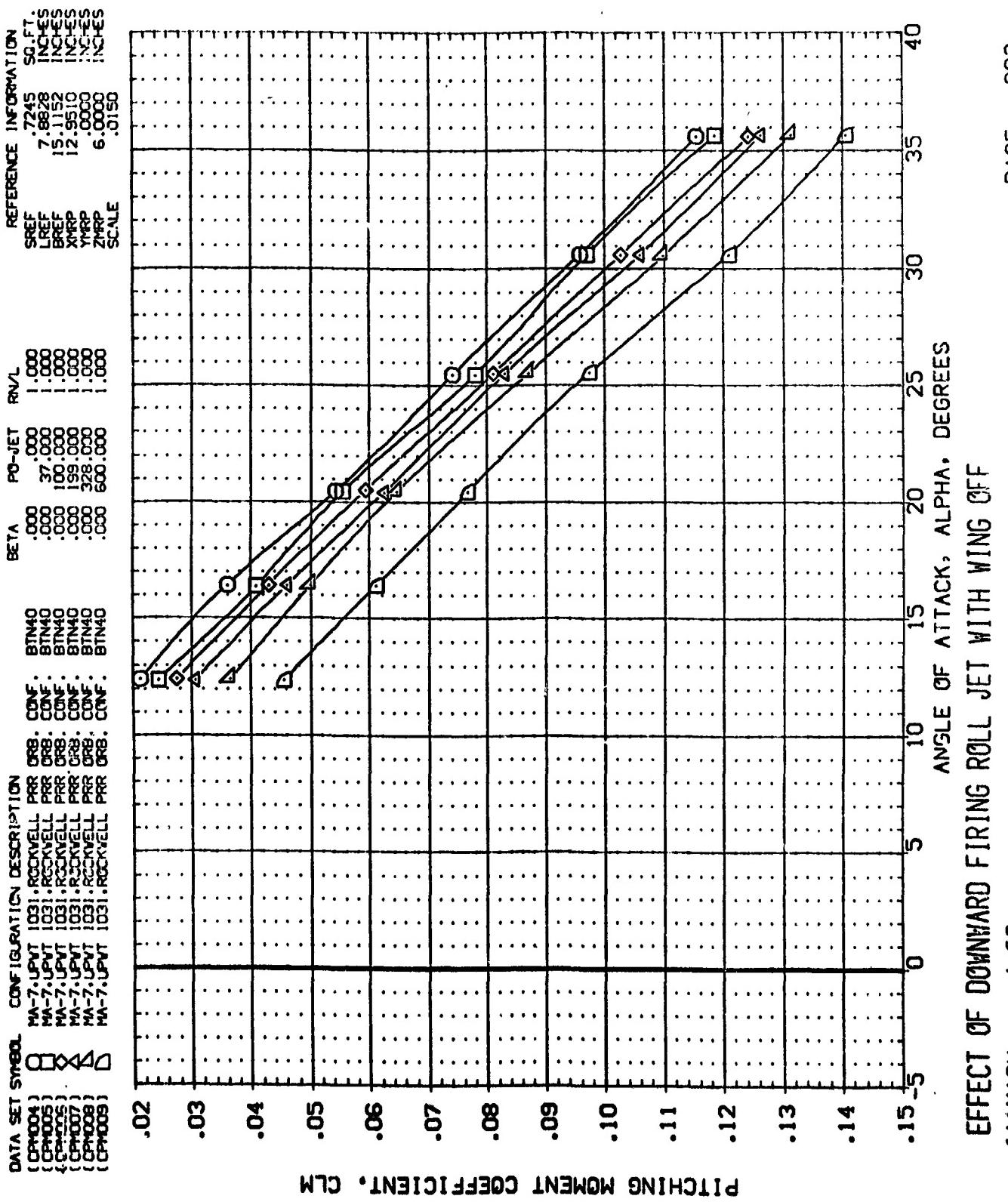


EFFECT OF DOWNWARD FIRING ROLL JET WITH WING OFF  
 (A)MACH = 4.00

DATA SET SPEED	CONFIGURATION DESCRIPTION	BETA	P0-JET	RNL
(CP1004)	MA-7, UPWT	1031, ROCKWELL PRR CRB. CDF.	.000	.000
(CP1005)	MA-7, UPWT	1031, ROCKWELL PRR CRB. CDF.	.000	.000
(CP1006)	MA-7, UPWT	1031, ROCKWELL PRR CRB. CDF.	.000	.000
(CP1007)	MA-7, UPWT	1031, ROCKWELL PRR CRB. CDF.	.000	.000
(CP1008)	MA-7, UPWT	1031, ROCKWELL PRR CRB. CDF.	.000	.000
(CP1009)	MA-7, UPWT	1031, ROCKWELL PRR CRB. CDF.	.000	.000

REFERENCE INFORMATION	S0.FT.	INCHES
SREF	.7245	INCHES
LREF	.7, .8828	INCHES
BREF	15, .152	INCHES
XRP	12, .9510	INCHES
YRP	.0000	INCHES
ZRP	.6, .0000	INCHES
SCALE	.0150	

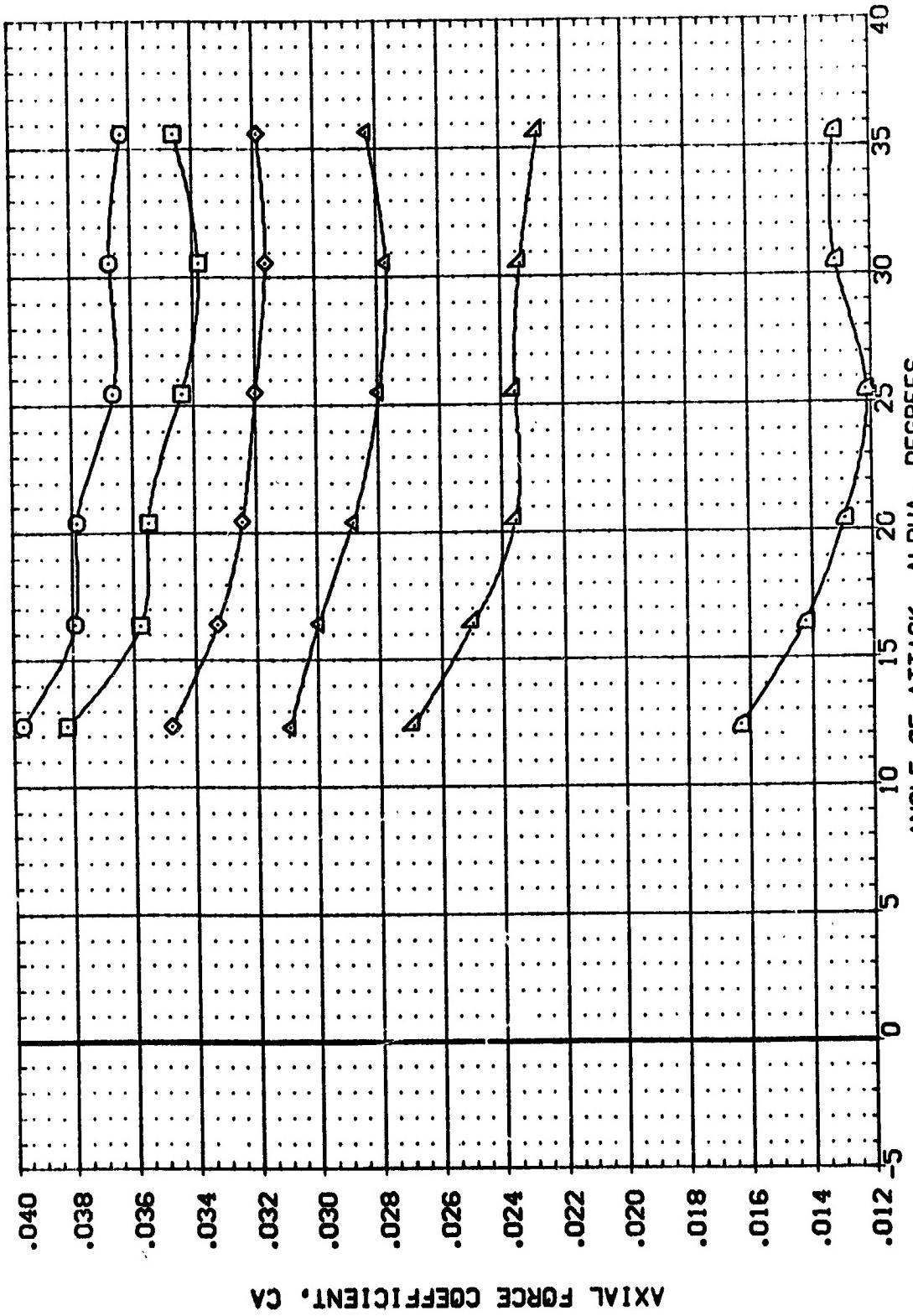




DATA SET SYMBOL      CONFIGURATION DESCRIPTION

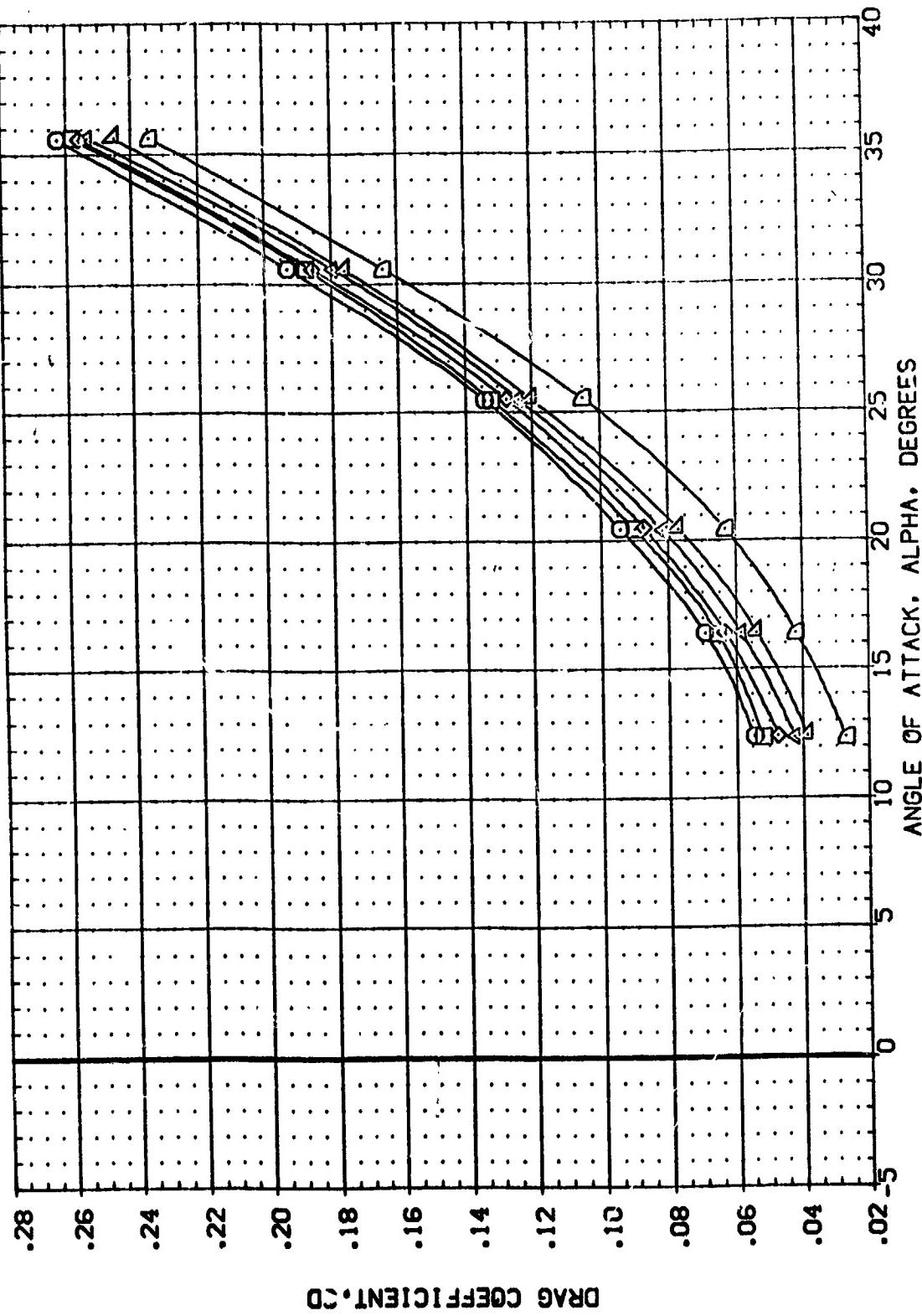
(CPH004)	MA-7-UPNT	1031, ROCKWELL PRR	ORB.	CONF.	BTN40
(CPH005)	MA-7-UPNT	1031, ROCKWELL PRR	ORB.	CONF.	BTN40
(CPH006)	MA-7-UPNT	1031, ROCKWELL PRR	ORB.	CONF.	BTN40
(CPH007)	MA-7-UPNT	1031, ROCKWELL PRR	ORB.	CONF.	BTN40
(CPH008)	MA-7-UPNT	1031, ROCKWELL PRR	ORB.	CONF.	BTN40
(CPH009)	MA-7-UPNT	1031, ROCKWELL PRR	ORB.	CONF.	BTN40

REFERENCE INFORMATION  
 SREF .7245 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XRP 12.9510 INCHES  
 YRP .0000 INCHES  
 ZRP .0000 INCHES  
 SCALE .0150



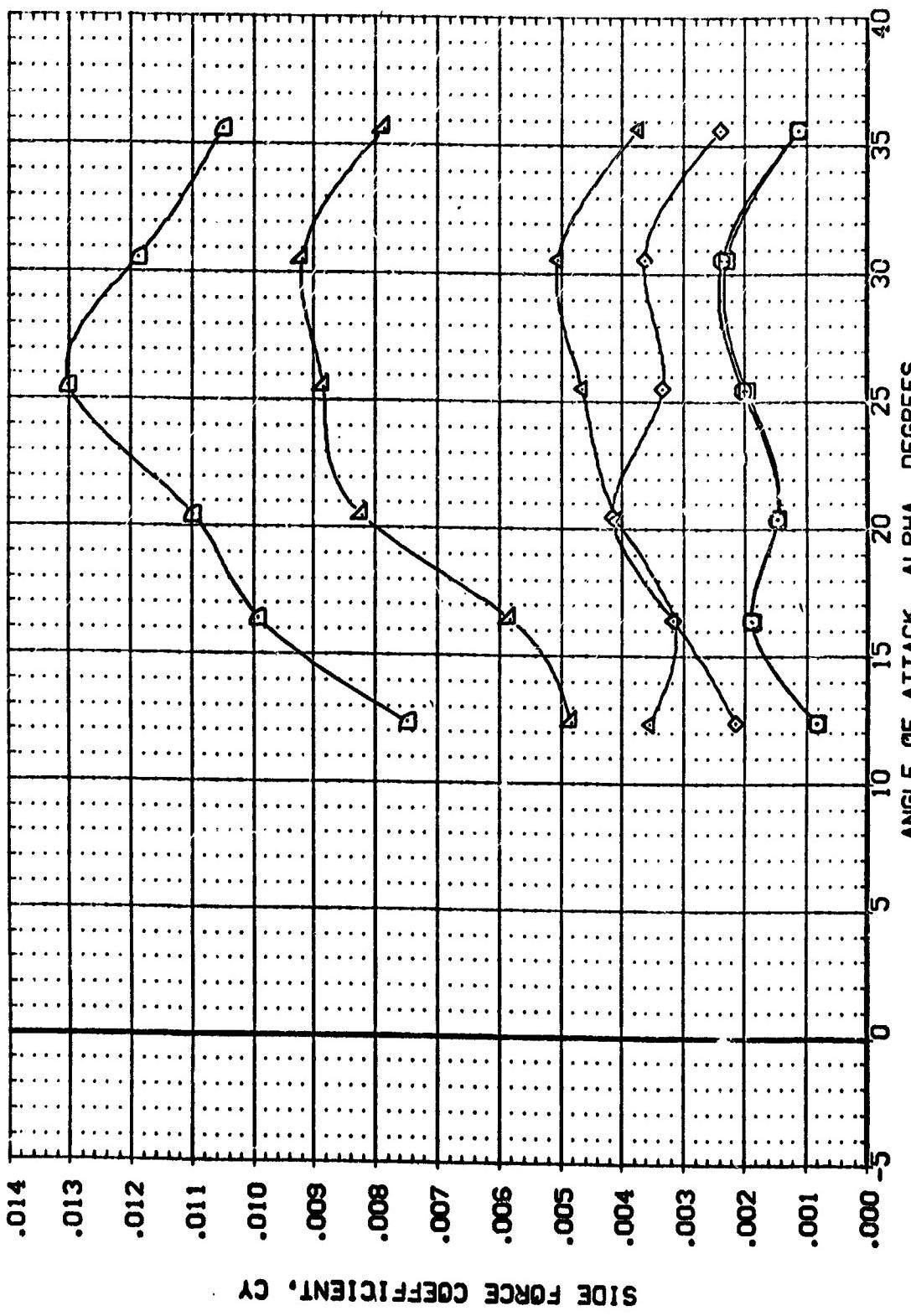
EFFECT OF DOWNWARD FIRING ROLL JET WITH WING OFF  
 $C_{MACH} = 4.00$

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	REFERENCE INFORMATION						
		BETA	P0-JET	RNL	SREF	SO. FT.	INCHES	INCHES
(DP0004)	MA-7. UPVT 1031. ROCKWELL PRR. CONF. BTN4C	.000	.000	.000	7.7245	SQ.FT.		
(DP0005)	MA-7. UPVT 1031. ROCKWELL PRR. CONF. BTN4C	.000	.37	.000	7.8828	INCHES		
(DP0006)	MA-7. UPVT 1031. ROCKWELL PRR. CONF. BTN4C	.000	.000	.000	15.1152	INCHES		
(DP0007)	MA-7. UPVT 1031. ROCKWELL PRR. CONF. BTN4C	.000	.000	.000	12.9510	INCHES		
(DP0008)	MA-7. UPVT 1031. ROCKWELL PRR. CONF. BTN4C	.000	.000	.000	.0000	INCHES		
(DP0009)	MA-7. UPVT 1031. ROCKWELL PRR. CONF. BTN4C	.000	.000	.000	6.0000	INCHES		
					.0150	SCALE		



EFFECT OF DOWNWARD FIRING ROLL JET WITH WING OFF  
( $\text{MACH} = 4.00$ )

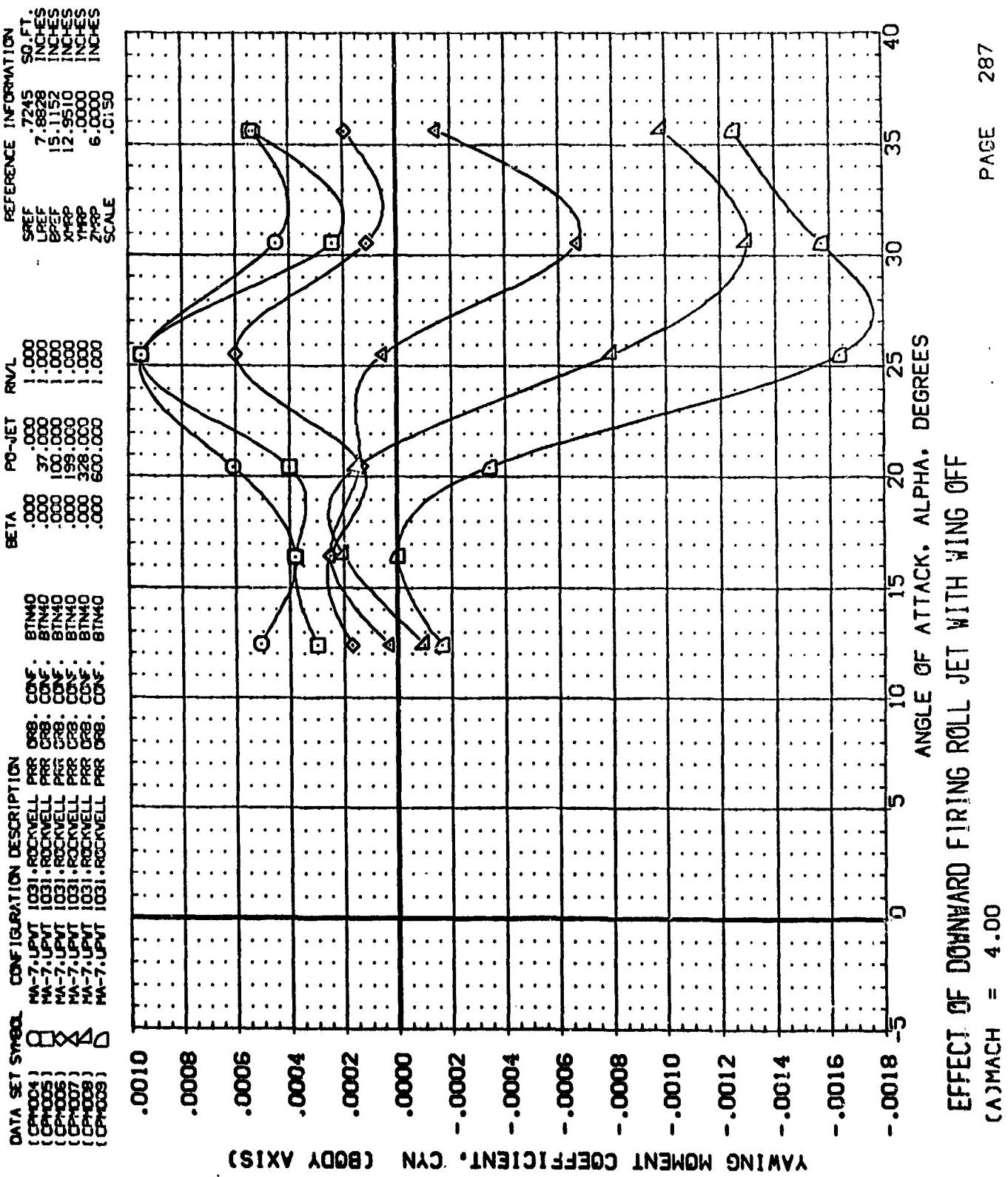
DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP004) MA-7. UPN 1031. ROCKWELL PRR OBB. CONF. BTM40  
 (CP005) MA-7. UPN 1031. ROCKWELL PRR CRR. CONF. BTM40  
 (CP006) MA-7. UPN 1031. ROCKWELL PRR CRR. CONF. BTM40  
 (CP007) MA-7. UPN 1031. ROCKWELL PRR CRR. CONF. BTM40  
 (CP008) MA-7. UPN 1031. ROCKWELL PRR CRR. CONF. BTM40  
 (CP009) MA-7. UPN 1031. ROCKWELL PRR CRR. CONF. BTM40

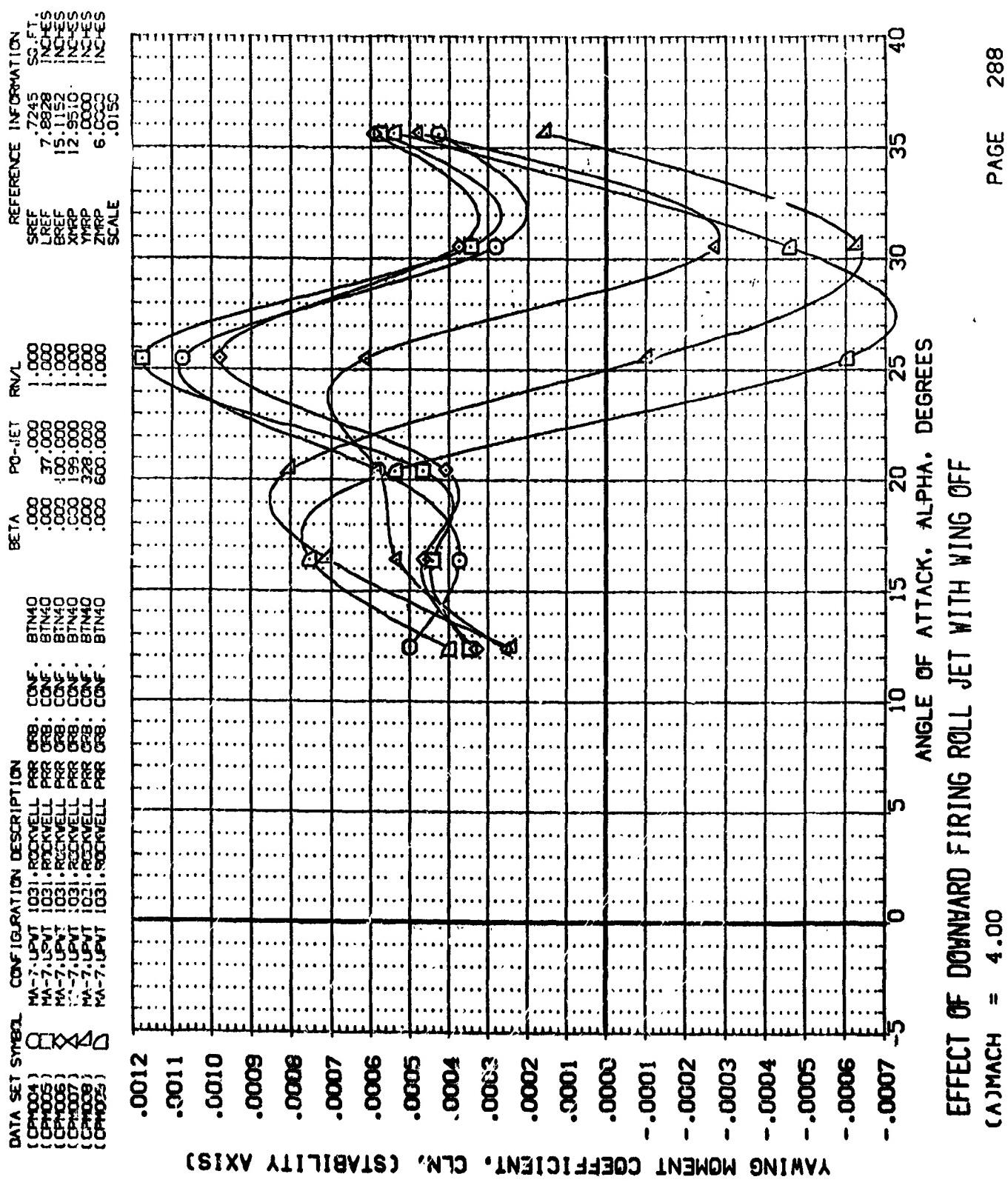


EFFECT OF DOWNWARD FIRING ROLL JET WITH WING OFF

MACH = 4.00

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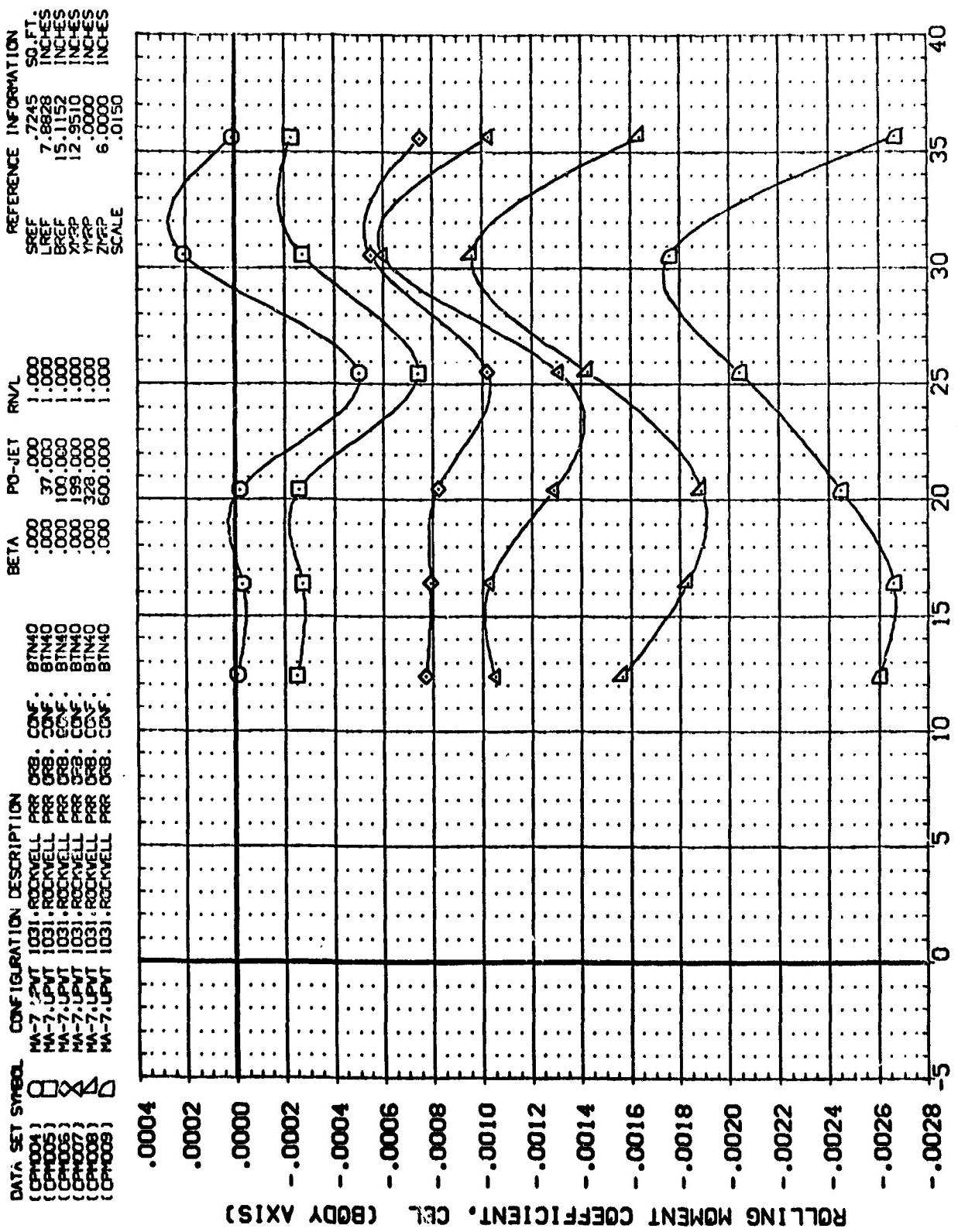


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C

DATA SET SYMBOL CONFIGURATION DESCRIPTION

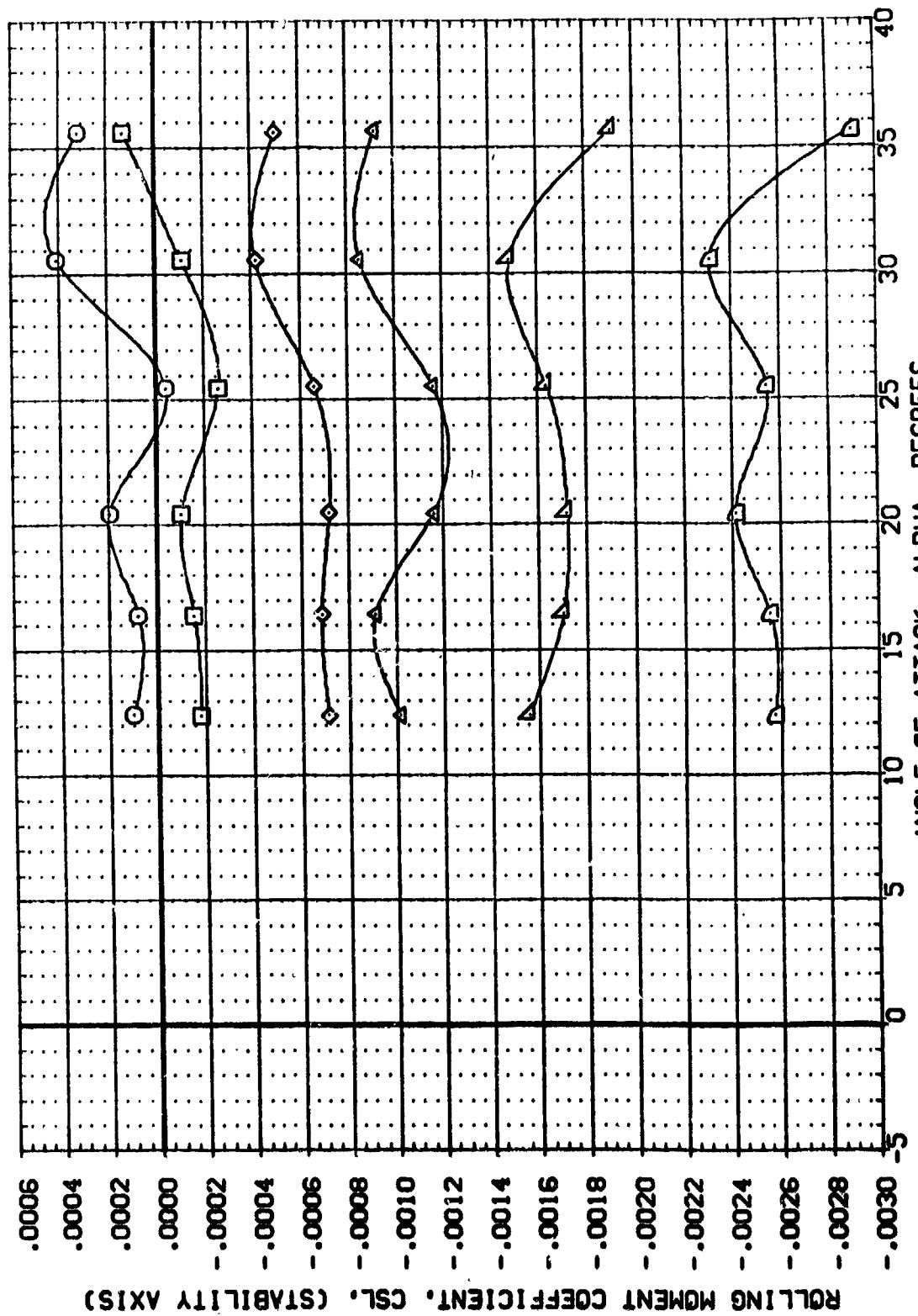
(DPH004)	□	MA-7-2PVT	1031	ROCKWELL	PRR	CONF.	BTN40
(DPH005)	○	MA-7-1PVT	1031	ROCKWELL	PRR	CONF.	BTN40
(DPH006)	×	MA-7-1PVT	1031	ROCKWELL	PRR	CONF.	BTN40
(DPH007)	△	MA-7-1PVT	1031	ROCKWELL	PRR	CONF.	BTN40
(DPH008)	▲	MA-7-1PVT	1031	ROCKWELL	PRR	CONF.	BTN40
(DPH009)	◆	MA-7-1PVT	1031	ROCKWELL	PRR	CONF.	BTN40



EFFECT OF DOWNWARD FIRING ROLL JET WITH WING OFF  
( $\text{MACH} = 4.00$ )

DATA SET SYMBOL CONFIGURATION DESCRIPTION  
 (CP#004) MA-7, UPN 1031, ROCKWELL PRR, CSE, CONF, BTN40  
 (CP#005) MA-7, UPN 1031, ROCKWELL PRR, ORB, CONF, BTN40  
 (CP#006) MA-7, UPN 1031, ROCKWELL PRR, ORB, CONF, BTN40  
 (CP#007) MA-7, UPN 1031, ROCKWELL PRR, ORB, CONF, BTN40  
 (CP#008) MA-7, UPN 1031, ROCKWELL PRR, ORB, CONF, BTN40  
 (CP#009) MA-7, UPN 1031, ROCKWELL PRR, ORB, CONF, BTN40

REFERENCE INFORMATION  
 SREF 7.7245 SEC FT.  
 LREF 7.8829 INCHES  
 BREF 15.1152 INCHES  
 XRP 12.9519 INCHES  
 YRP .0000 INCHES  
 ZRP 6.0000 INCHES  
 SCALE .0150

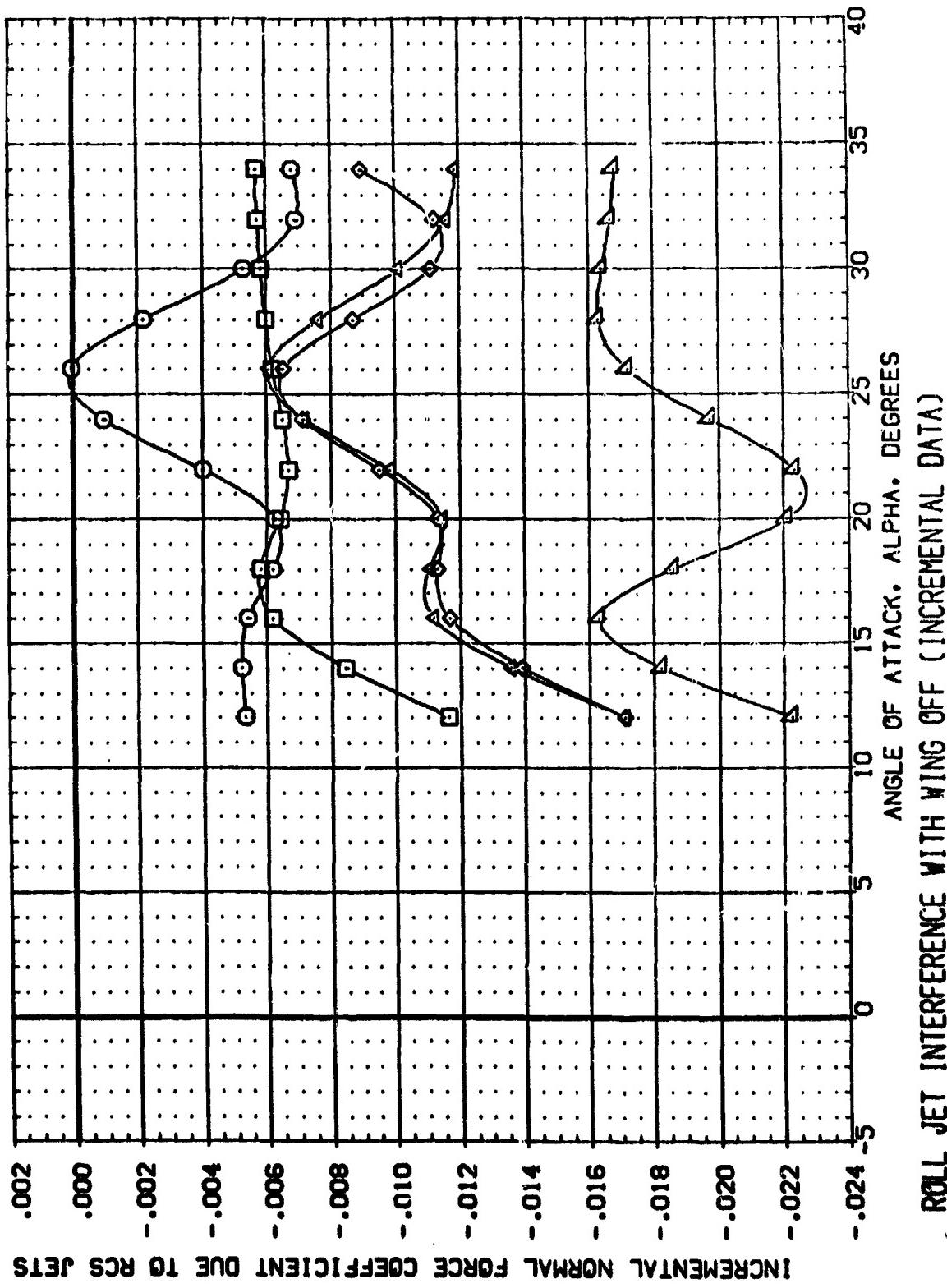


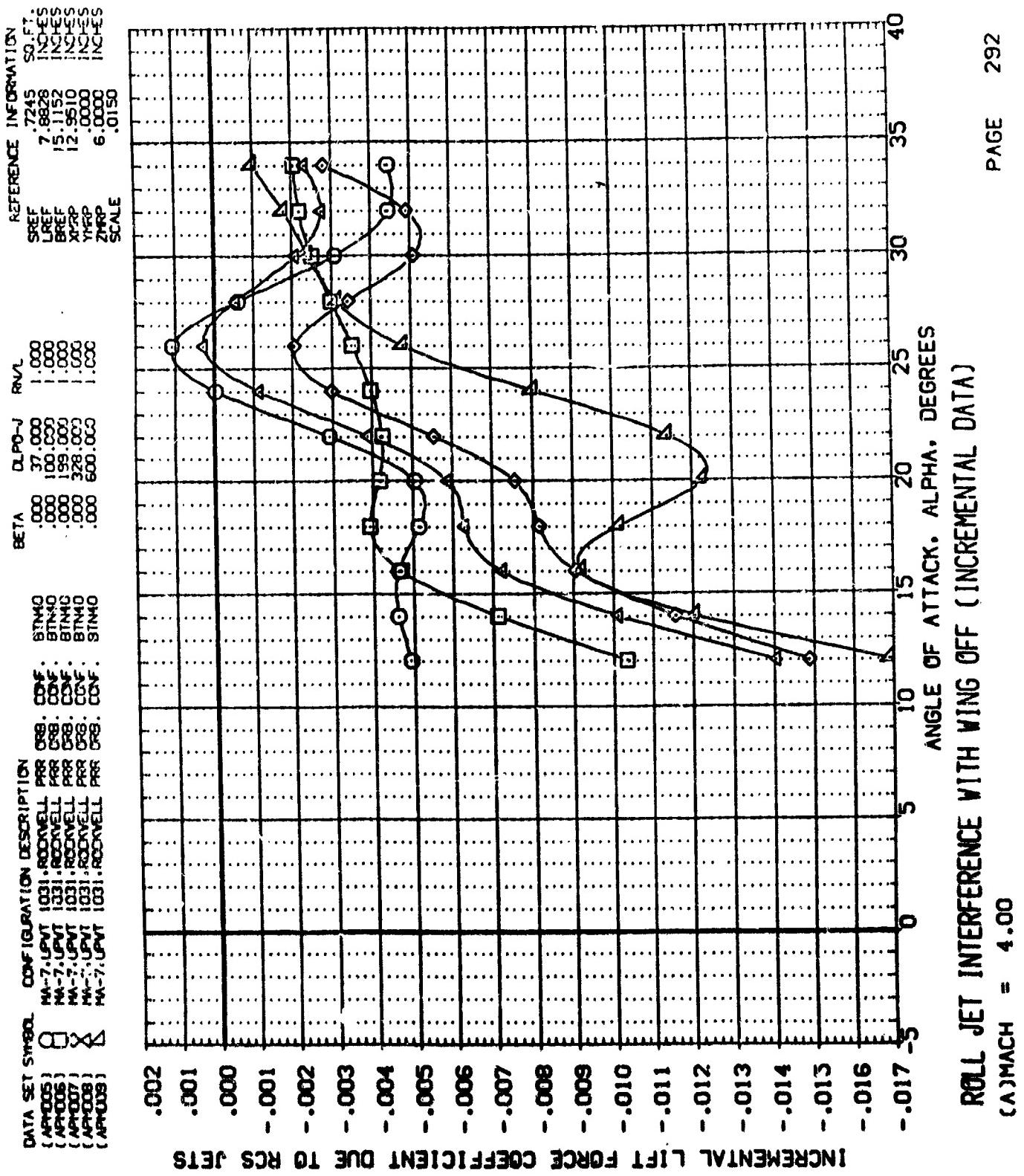
EFFECT OF DOWNWARD FIRING ROLL JET WITH WING OFF  
 (MACH = 4.00)

DATA SET SUMMARY CONFIGURATION DESCRIPTION

( APT005 )	MA-7. UPVT	ROCKWELL PRR CDF.
( APT006 )	MA-7. UPVT	ROCKWELL PRR CDF.
( APT007 )	MA-7. UPVT	ROCKWELL PRR CDF.
( APT008 )	MA-7. UPVT	ROCKWELL PRR CDF.
( APT009 )	MA-7. UPVT	ROCKWELL PRR CDF.

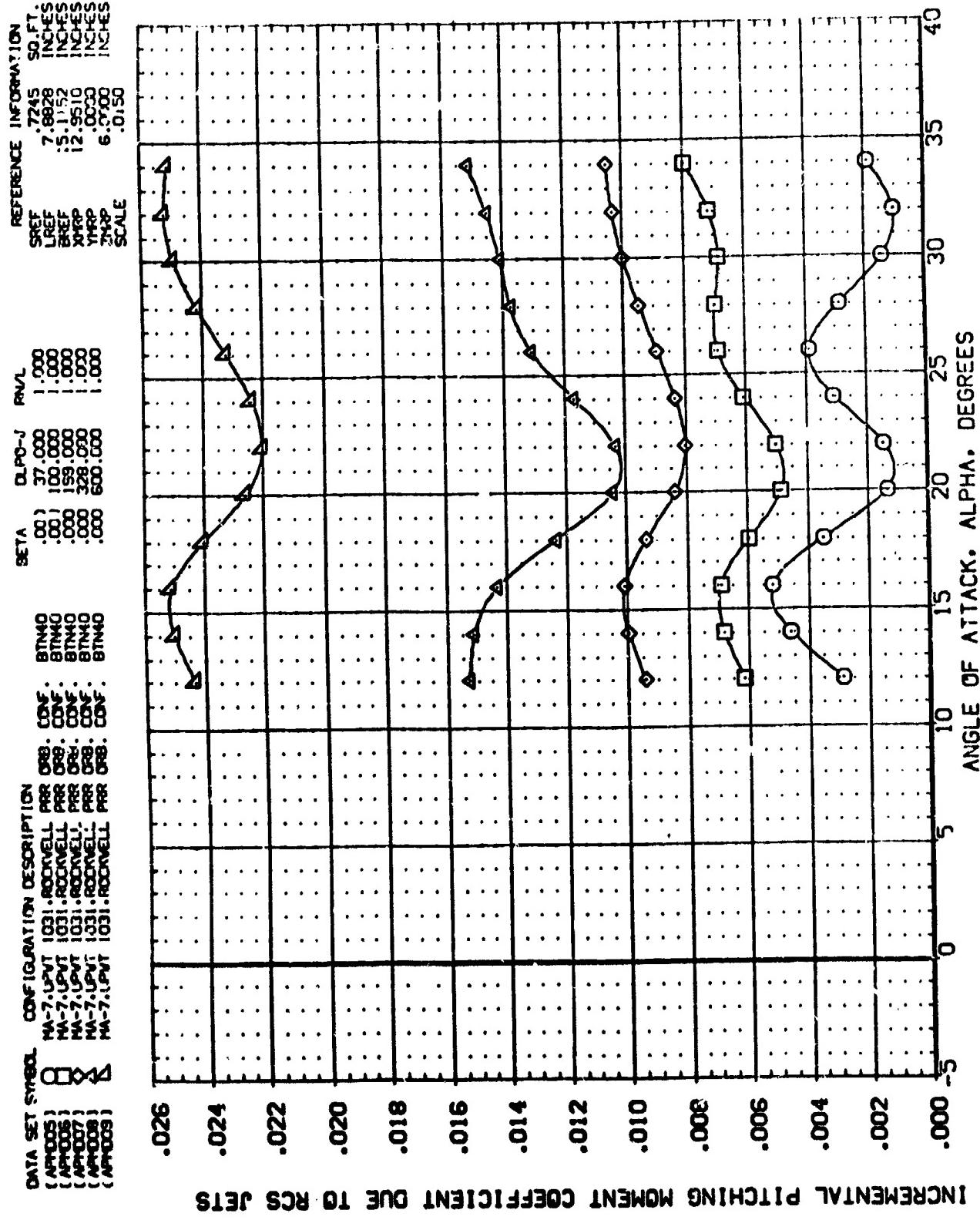
REFERENCE INFORMATION  
 SREF : 7245 SO. FT.  
 LREF : 7.8828 INCHES  
 BREF : 15.1152 INCHES  
 XREF : 12.9510 INCHES  
 YREF : .0000 INCHES  
 ZREF : 6.0000 INCHES  
 SCALE : .0150





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ROLL JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)



Part I IET INTEPEREPENCE WITH WING QEE (INCREMENTAL DATA)

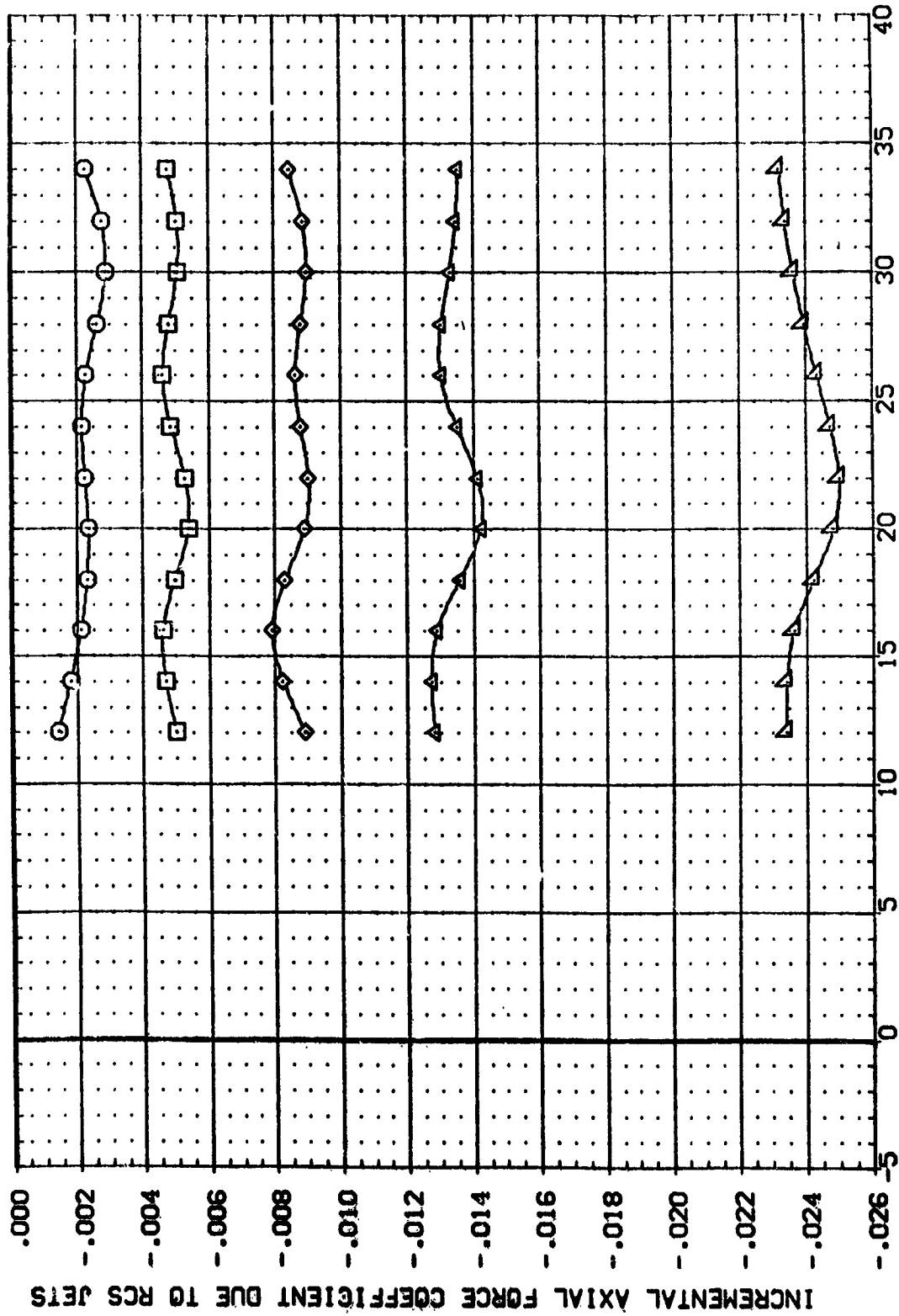
ROLL JET INTERFAC  
(A)MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APM005)	□	MA-7, UPVT 1031, ROCKWELL PRR ORB.
(APM006)	○	MA-7, LPTV 1031, ROCKWELL PRR ORB.
(APM007)	◇	MA-7, UPVT 1031, ROCKWELL PRR C.
(APM008)	◆	MA-7, UPVT 1031, ROCKWELL PRR C.
(APM009)	△	MA-7, UPVT 1031, ROCKWELL PRR C.

REFERENCE INFORMATION

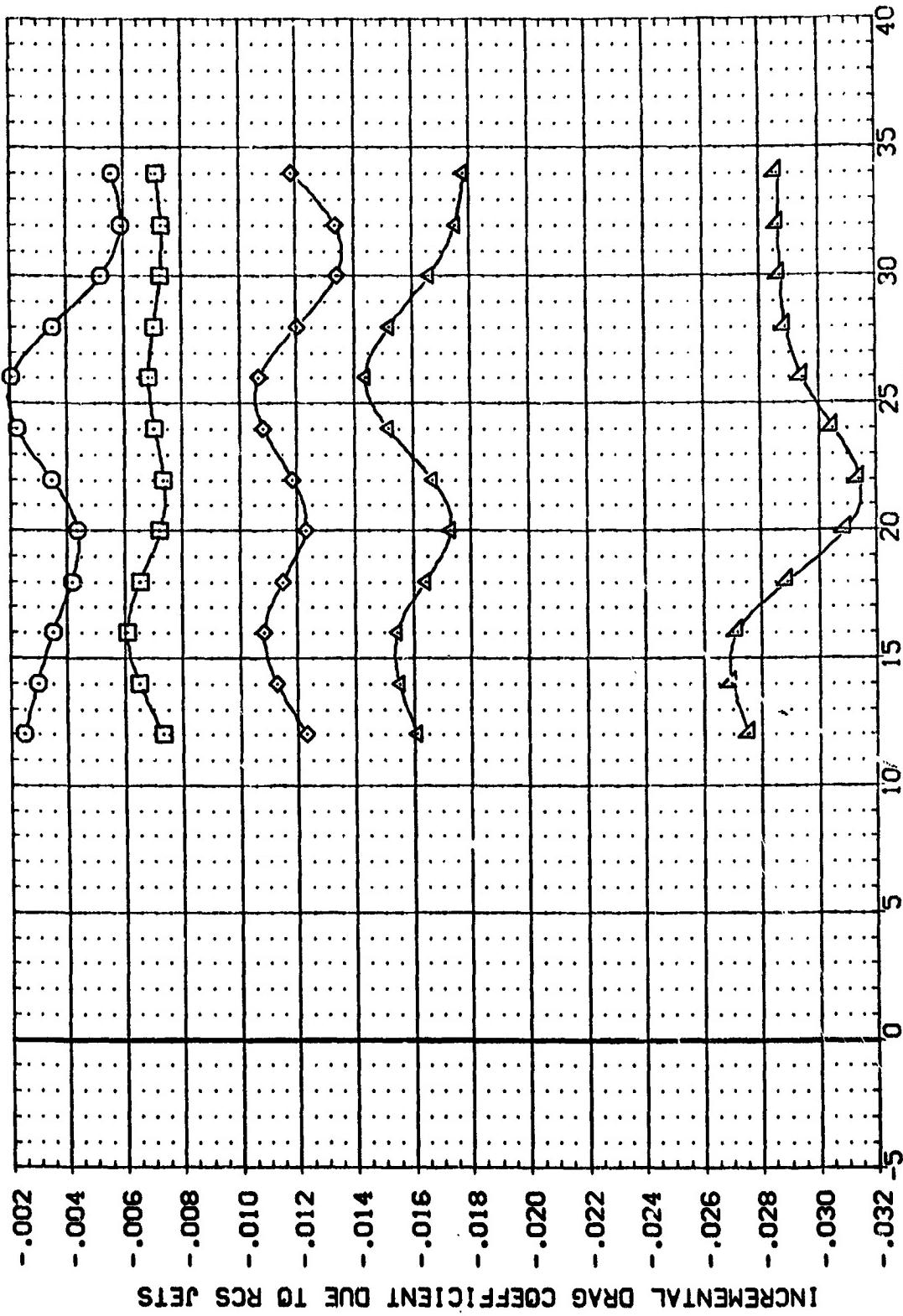
SREF	.7245	SQ.FT.
LREF	7.8228	INCHES
BREF	15.1152	INCHES
XMRP	12.9510	INCHES
YMRP	.5000	INCHES
ZMRP	6.0000	INCHES
SCALE	.0150	



ROLL JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)  
(A)MACH = 4.00

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	R <sub>NL</sub>
(APT05)	MA-7, UPNT 1031, ROCKWELL PRR GRB, CONF: BTN40	.000 37.000
(APT06)	MA-7, UPNT 1031, ROCKWELL PRR GRB, CONF: BTN40	.000 100.000
(APT07)	MA-7, UPNT 1031, ROCKWELL PRR GRB, CONF: BTN40	.000 199.000
(APT08)	MA-7, UPNT 1031, ROCKWELL PRR GRB, CONF: BTN40	.000 328.000
(APT09)	MA-7, UPNT 1031, ROCKWELL PRR GRB, CONF: BTN40	.000 600.000

SCALE .0150



ROLL JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)

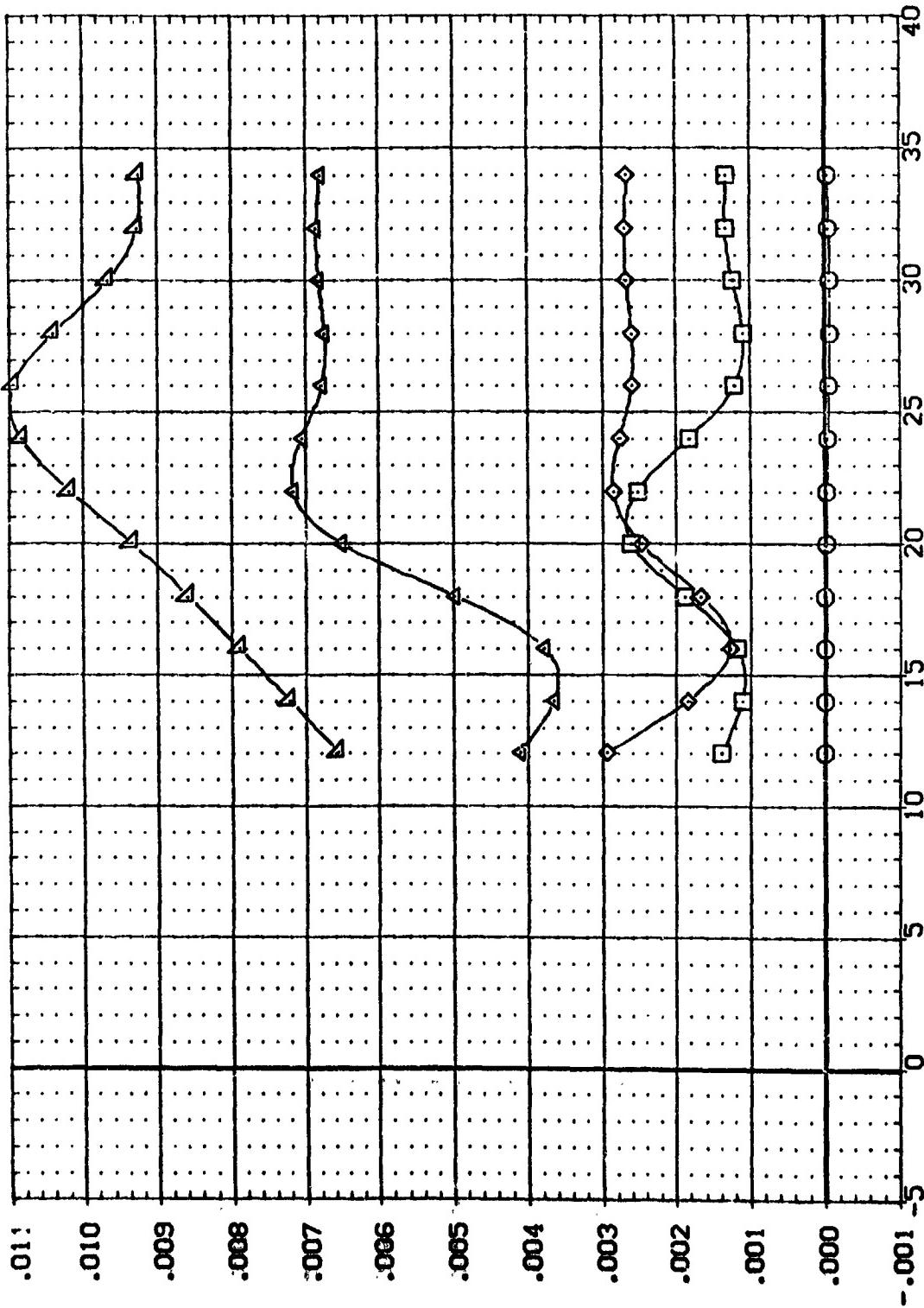
$(\Delta MACH) = 4.00$

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APR06)	□	MA-7, UPN, 1031, ROCKWELL PRB, CONF.
(APR07)	○	MA-7, UPN, 1031, ROCKWELL PRB, CONF.
(APR08)	×	MA-7, UPN, 1031, ROCKWELL PRB, CONF.
(APR09)	△	MA-7, UPN, 1031, ROCKWELL PRB, CONF.

REFERENCE INFORMATION

SREF	.7245	SO. FT.
LREF	.7828	INCHES
BREF	.15152	INCHES
XCP	.129510	INCHES
YCP	.00000	INCHES
ZCP	.00000	INCHES
SCALE	.0150	



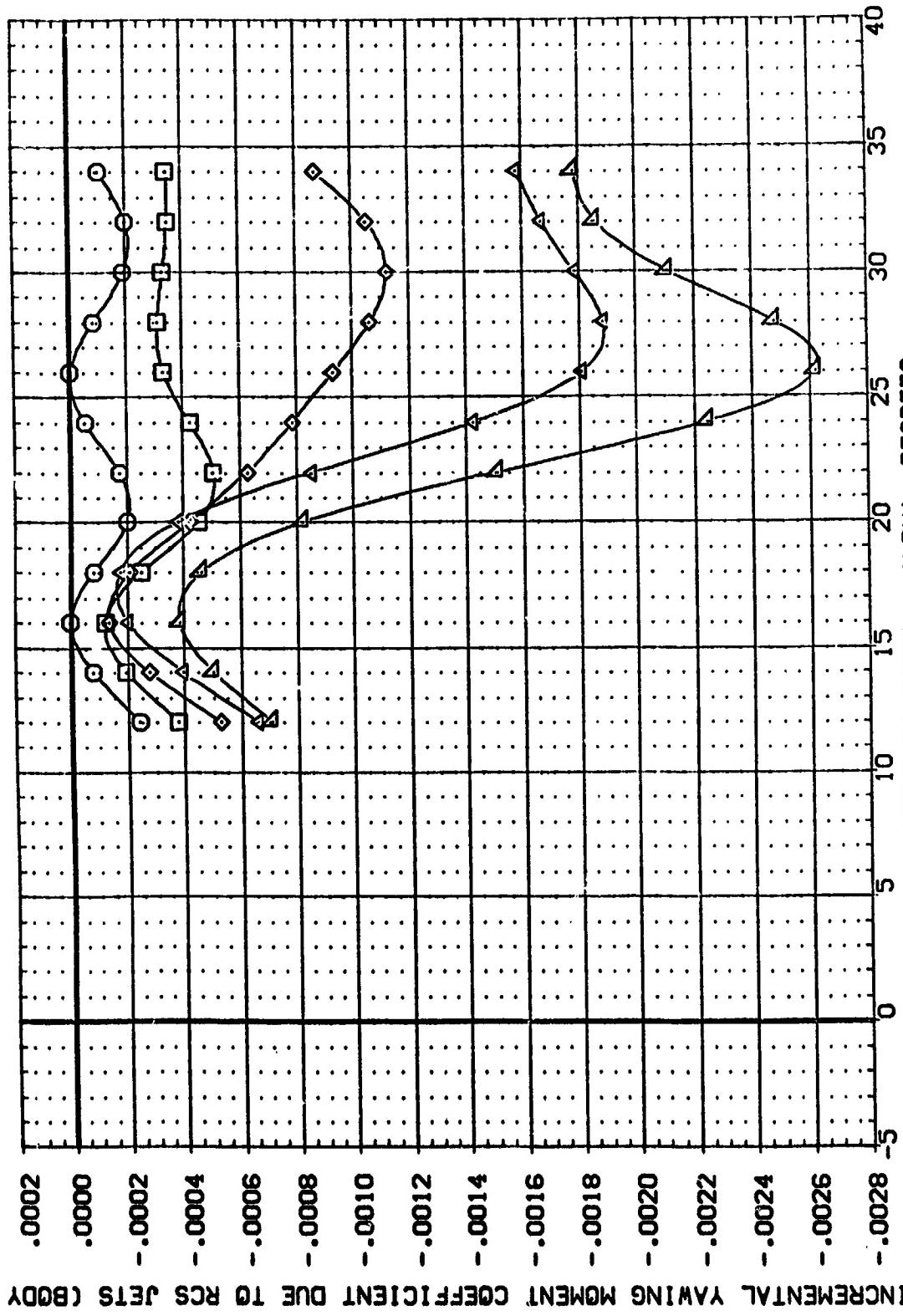
ROLL JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)  
( $\text{MACH} = 4.00$ )

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(APR005)	□	MA-7.UPUT	1031	ROCKWELL	PRR	CONF.	BTM40	BET <sub>A</sub>	DLP <sub>G-J</sub>	RNL
(APR006)	○	MA-7.UPUT	1031	ROCKWELL	PRR	CONF.	BTM40	.000	.37 .070	1.000
(APR007)	×	MA-7.UPUT	1031	ROCKWELL	PRR	CONF.	BTM40	.000	.100 .000	1.000
(APR008)	△	MA-7.UPUT	1031	ROCKWELL	PRR	CONF.	BTM40	.000	.199 .000	1.000
(APR009)	◀	MA-7.UPUT	1031	ROCKWELL	PRR	CONF.	BTM40	.000	.328 .000	1.000
		MA-7.UPUT	1031	ROCKWELL	PRR	CONF.	BTM40	.000	.600 .000	1.000

REFERENCE INFORMATION

SREF	.7245	SQ.FT.
LREF	7.8828	INCHES
BREF	15.1152	INCHES
XTRP	12.9510	INCHES
YTRP	6.0000	INCHES
ZTRP	6.0000	INCHES
SCALE	.0150	



ROLL JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)

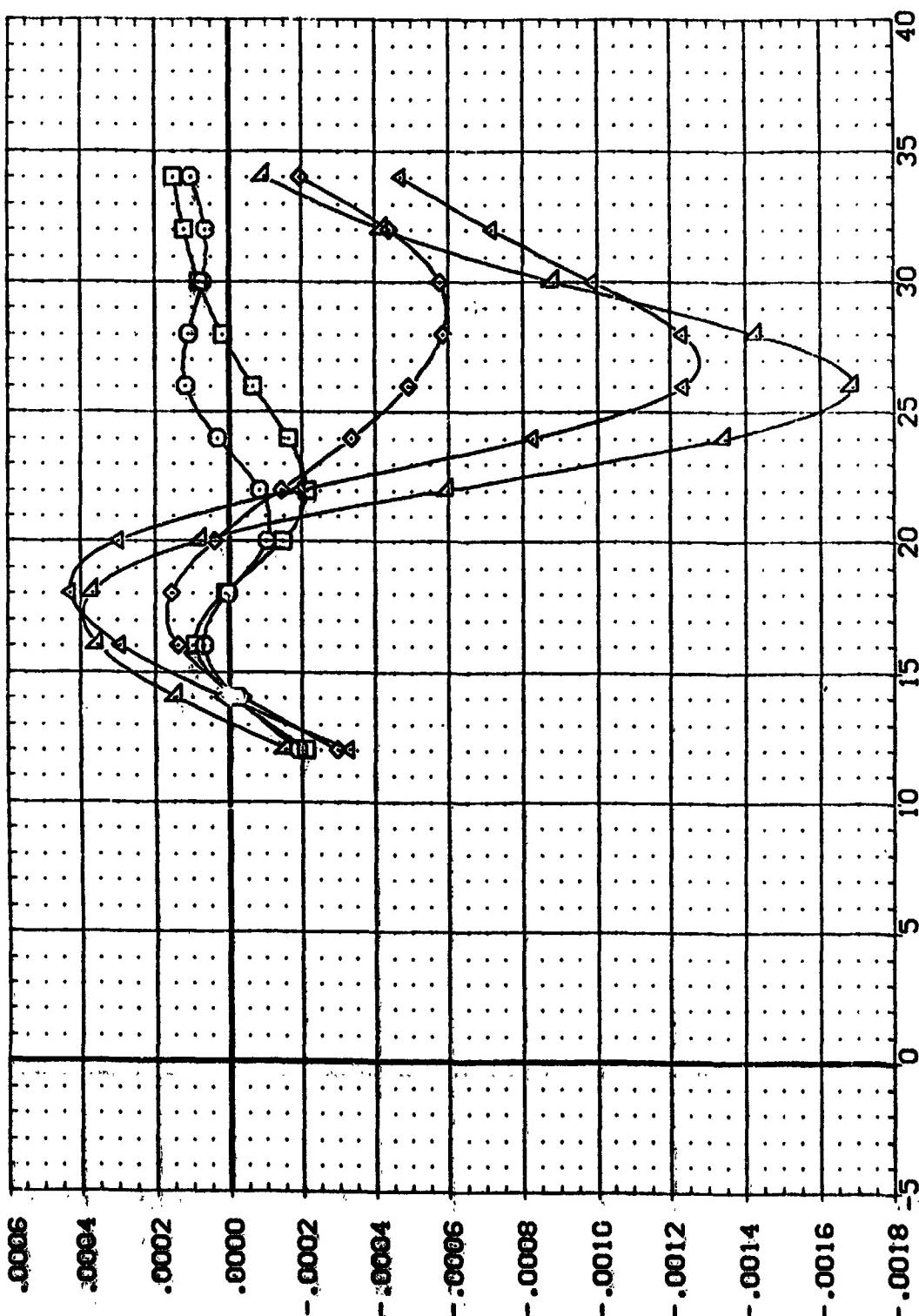
(A)MACH = 4.00

DATA SET SYMBOL CONFIGURATION DESCRIPTION

LAPHO5	MA-7, UPWT	1031, ROCKWELL PRR ORB.	CONF.	BTN40
□	MA-7, UPWT	1031, ROCKWELL PRR ORB.	CONF.	BTN40
△	MA-7, UPWT	1031, ROCKWELL PRR ORB.	CONF.	BTN40
○	MA-7, UPWT	1031, ROCKWELL PRR ORB.	CONF.	BTN40
◇	MA-7, UPWT	1031, ROCKWELL PRR ORB.	CONF.	BTN40
×	MA-7, UPWT	1031, ROCKWELL PRR ORB.	CONF.	BTN40
△	MA-7, UPWT	1031, ROCKWELL PRR ORB.	CONF.	BTN40

REFERENCE INFORMATION

SREF	.7245	SQ.FT.
LREF	7.8823	INCHES
BREF	15.1152	INCHES
XMRP	12.9510	INCHES
YMRP	6.0000	INCHES
ZMRP	.0150	SCALE



INCREMENTAL YAWING MOMENT COEFFICIENT DUE TO RCS JETS (STABILITY AXIS)

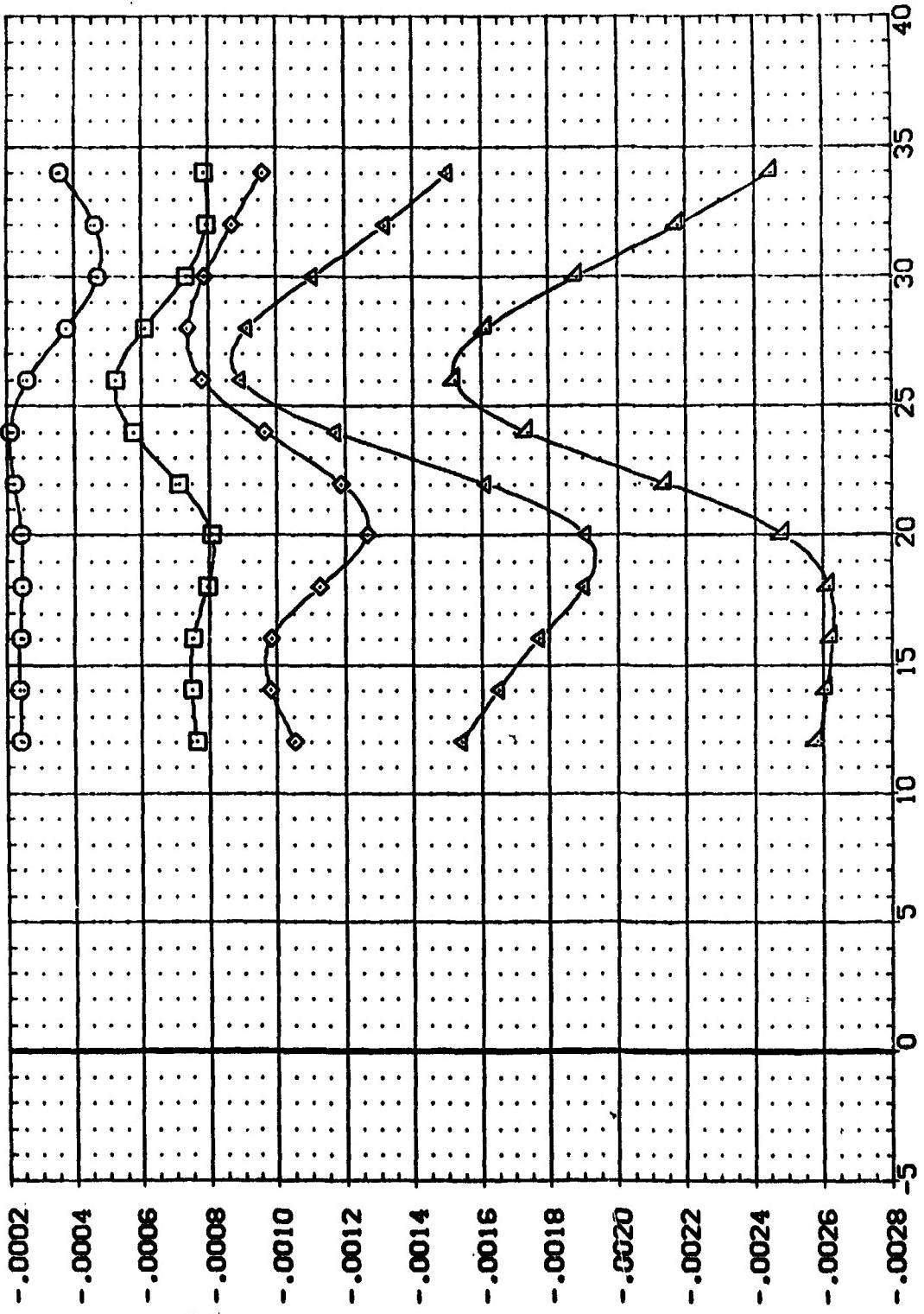
ROLL JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)  
( $\Delta MACH = 4.00$ )

DATA SET SPEED CONFIGURATION DESCRIPTION

C	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BTN40
APT005	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BTN40
APT006	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BTN40
APT007	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BTN40
APT008	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BTN40
APT009	MA-7, UPNT	1031, ROCKWELL	PRR	CONF:	BTN40

REFERENCE INFORMATION  
 SREF .7245 SO.FT.  
 LREF .8828 INCHES  
 BREF 15.1152 INCHES  
 XREF 12.9510 INCHES  
 YREF 6.0000 INCHES  
 ZREF 6.0000 INCHES  
 SCALE .0150

INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS (BODY AXIS)

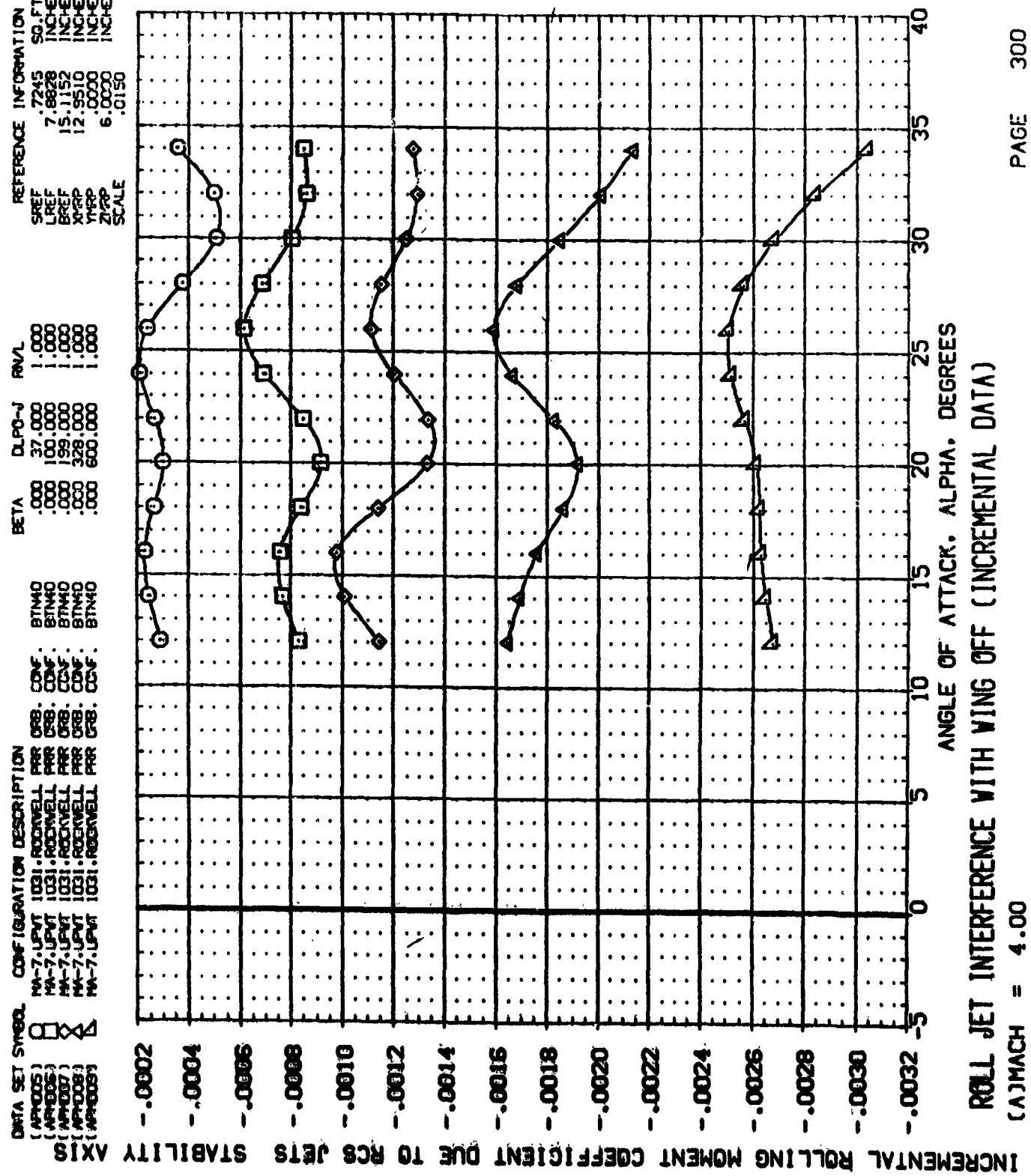


ROLL JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)

(A)MACH = 4.00

DATA SET SPEED. CONFIGURATION DESCRIPTION  
 (APR005) MA-7, UPNT 1031. ROCKWELL PRR 058. CONF. BTM40  
 (APR006) MA-7, UPNT 1031. ROCKWELL PRR 058. CONF. BTM40  
 (APR007) MA-7, UPNT 1031. ROCKWELL PRR 058. CONF. BTM40  
 (APR008) MA-7, UPNT 1031. ROCKWELL PRR 058. CONF. BTM40  
 (APR009) MA-7, UPNT 1031. ROCKWELL PRR 058. CONF. BTM40

REFERENCE INFORMATION  
 SREF .7215 SQ.FT.  
 LREF 7.8828 INCHES  
 BREF 15.1152 INCHES  
 XZP 12.9510 INCHES  
 YTP 6.0000 INCHES  
 ZTP .0150 SCALE



INCREMENTAL ROLLING MOMENT COEFFICIENT DUE TO RCS JETS  
 (MACH = 4.00)  
 ROLL JET INTERFERENCE WITH WING OFF (INCREMENTAL DATA)

APPENDIX  
TABULATED SOURCE DATA

Plotted data tabulations are available  
on request from DMS.

DATE OF PCS 74

TABULATED SOURCE DATA LARC UPUT 1031

PAGE 1

MA-7, UPUT 1031, ROCKWELL FRR ORB. CONF. BTM1

(RPM001) ( 16 JAN 74 )

## REFERENCE DATA

SPEC = .7245 SO. FT. XRP = 12.9510 INCHES  
 LINF = 7.8828 INCHES YRP = .0000 INCHES  
 GRP = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

## PARAMETRIC DATA

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.230	-.000071	.06176	.03694	.02160	-.00025	.00051	.00087	12.05675	5.39326	3.46940
4.000	16.337	-.001046	.11023	.03799	.03707	-.00027	.00039	.00186	13.08867	5.39326	4.41133
4.000	20.403	-.00102	.15628	.03670	.05456	-.00026	.00061	.00151	13.08867	6.34318	5.46940
4.000	25.514	-.00140	.22671	.03579	.07518	-.00051	.00073	.00204	10.15289	7.29711	5.46940
4.000	30.582	-.00096	.31130	.03600	.09689	-.00031	.00095	.00295	8.24914	10.15289	3.46940
4.000	35.599	-.00121	.38624	.03513	.11579	-.00031	.00053	.00122	7.29711	14.91253	3.46940
GRADIENT		-.00001	.01459	-.00015	.000498	.00031	.00000	-.00000	-.25463	.38900	-.01751

MA-7, UPUT 1031, ROCKWELL FRR ORB. CONF. BTM1

(RPM002) ( 16 JAN 74 )

## REFERENCE DATA

SPEC = .7245 SO. FT. XRP = 12.9510 INCHES  
 LINF = 7.8828 INCHES YRP = .0000 INCHES  
 GRP = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

## PARAMETRIC DATA

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.365	-.000057	.08194	.03674	.02354	-.00025	.00030	.00086	22.52794	6.34518	4.41133
4.000	15.484	-.00112	.10025	.03742	.03581	-.00028	.00038	.00197	18.72024	5.39326	4.41133
4.000	20.436	-.00100	.16219	.03659	.05349	-.00026	.00061	.00147	15.86445	5.39326	4.41133
4.000	25.494	-.00134	.22874	.03591	.07704	-.00050	.00094	.00206	12.05675	7.29711	4.41133
4.000	30.503	-.00098	.31150	.03637	.09686	-.00025	.00101	.00296	9.27096	10.15289	4.41133
4.000	35.614	-.00119	.39429	.03627	.11656	-.00031	.00117	.00326	5.39326	16.81638	3.46940
GRADIENT		-.00002	.01424	-.00009	.00404	.00002	.00001	-.00001	-.71566	.42398	-.02947

DATE 08 FEB 74

TABULATED SOURCE DATA LARC INPUT 1031

PAGE 2

NA-7,UPWT 1031,ROCKWELL PNR CRB. CONF. BTM

(RPH003) ( 16 JAN 74 )

## REFERENCE DATA

SURF	.7245 36. FT.	XHYP	=	12.9510 INCHES
LUREP	7.8668 INCHES	YHYP	=	.0000 INCHES
BREF	15.1132 INCHES	ZHYP	=	6.0000 INCHES
SCALE	.0150			

RUN NO. 801 0 RN/L = 1.00 GRADIENT INTERVAL = -.500/ .500

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.451	-.00114	.06174	.03620	.02347	-.00029	.00016	.00226	26.33565	6.34518	3.48940
4.000	16.497	-.00108	.11008	.03645	.03903	-.00027	.00038	.00188	23.47987	6.34518	3.48940
4.000	20.413	-.00096	.05622	.03638	.05458	-.00026	.00040	.00150	21.57602	6.34518	3.48940
4.000	25.515	-.00140	.22661	.03526	.07711	-.00031	.00073	.00214	14.91253	7.29711	3.48940
4.000	30.549	-.00141	.31146	.03504	.0917	-.00021	.00023	.00240	10.15289	10.15289	3.48940
4.000	35.637	-.00121	.39469	.03560	.116	-.00025	.00032	.00122	9.20956	13.96060	3.48940
	GRADIENT	-.00003	.01138	-.00011	.004	-.00002	.00001	-.00002	-.81109	.31691	.00000

NA-7,UPWT 1031,ROCKWELL PNR CRB. CONF. BTM

(RPH004) ( 16 JAN 74 )

## REFERENCE DATA

SURF	.7245 36. FT.	XHYP	=	12.9510 INCHES
LUREP	7.8668 INCHES	YHYP	=	.0000 INCHES
BREF	15.1132 INCHES	ZHYP	=	6.0000 INCHES
SCALE	.0150			

RUN NO. 751 0 RN/L = 1.00 GRADIENT INTERVAL = -.500/ .500

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.309	-.00069	.07352	.03963	.02127	-.00001	.00051	.00093	7.15675	12.86831	3.34904
4.000	16.309	-.00108	.11602	.03793	.03399	-.00003	.00038	.00189	6.25182	12.86831	4.34904
4.000	20.419	-.00100	.16816	.03784	.05426	-.00002	.00041	.00147	6.25482	14.77216	3.34904
4.000	25.464	-.00132	.23491	.03661	.07412	-.00039	.00095	.00222	5.23289	14.77216	3.34904
4.000	30.562	-.00153	.31755	.03670	.09580	-.00021	.00145	.00237	5.25289	15.72409	3.34904
4.000	35.617	-.00117	.40062	.03629	.11558	-.00001	.00053	.00113	6.25482	15.72409	3.34904
	GRADIENT	-.00003	.01415	-.00013	.02410	-.00003	.00001	-.01102	-.04998	.13773	-.01756

DATE 08 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

PAGE 3

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BTN40

(RFN005) ( 16 JAN 74 )

## REFERENCE DATA

SPDP = .7245 50.FT. XNP = 12.9510 INCHES  
 LINP = 7.4828 INCHES YNP = .0000 INCHES  
 GRDP = 15.1152 INCHES ZNP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 74/ 0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.350	-.000055	.03703	.03803	.02433	-.02025	.00030	.000001	6.20482	12.86831
4.000	16.376	-.00100	.11037	.03576	.04097	-.00527	.02036	.00186	6.20482	12.86831
4.000	20.427	-.00206	.16229	.03551	.05544	-.00206	.02145	.02145	5.25269	14.77216
4.000	25.466	-.00319	.23506	.03439	.07799	-.00314	.02095	.02196	5.25269	14.77216
4.000	30.571	-.00437	.31171	.03379	.09696	-.00327	.0224	.00224	5.25269	15.72409
4.000	35.627	-.00557	.39471	.03457	.11862	-.00323	.02054	.02112	6.20482	15.72409
GRADIENT		-.000003	.01414	-.000015	.00404	-.000001	.000002	-.01495	.13753	.000003

(RFN006) ( 16 JAN 74 )

## REFERENCE DATA

SPDP = .7245 50.FT. XNP = 12.9510 INCHES  
 LINP = 7.4828 INCHES YNP = .0000 INCHES  
 GRDP = 15.1152 INCHES ZNP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 75/ 0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.350	-.00109	.06215	.03479	.02745	-.00077	.00017	.000215	7.15675	12.86831
4.000	16.429	-.00160	.11056	.03326	.04295	-.00079	.00025	.000317	7.15675	13.86223
4.000	20.461	-.00216	.16244	.03243	.05929	-.00082	.000315	.000415	6.20482	14.77216
4.000	25.507	-.00297	.22926	.03197	.08107	-.00102	.000360	.000334	6.20482	14.77216
4.000	30.574	-.00392	.31197	.03161	.10273	-.00095	.000311	.000364	7.15675	14.77216
4.000	35.619	-.00495	.39501	.03186	.12434	-.00075	.000319	.000240	7.15675	17.62794
GRADIENT		-.000002	.01431	-.000012	.00419	-.000001	.000000	.000001	.00248	.000003

(RFN005) ( 16 JAN 74 )

## PARAMETRIC DATA

BETA = .000 RNL = 1.000

BETA = .000 RNL = 1.000

BETA = .000 RNL = 1.000





DATE OF FEB 74

TABULATED SOURCE DATA LARC INPUT 1031

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MA-7, LARC INPUT 1031, ROCKWELL PPR CRG. CONF. BINA1

(RPHD11) (06 FEB 74)

## SOURCE DATA

**SIMP = .7243 30.5FT. RNUF = 12.9310 INCHES**  
**LNUF = 7.0000 INCHES RNUL = .0000 INCHES**  
**BNUF = 13.1132 INCHES RNUL = 6.0000 INCHES**  
**SCALE = .0130**

RUN NO.  $\theta/\phi$   $RNU = 1.00$  GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.400	-.000361	.25037	.05747	-.03456	.00046	.00031	.00097	5.31253	6.26445	4.36060
4.000	16.503	-.000291	.36642	.03764	-.03909	.00046	.00034	.00113	5.31253	6.26445	4.36060
4.000	20.547	-.000244	.39014	.05763	-.04690	.00031	.00036	.00053	5.31253	6.26445	4.36060
4.000	25.704	-.000236	.68339	.05771	-.05932	.00032	.00037	.00100	4.36060	6.26445	4.36060
4.000	30.409	-.000269	.87200	.05614	-.07935	.00036	.00035	.00101	5.31253	6.26445	4.36060
4.000	35.800	-.000243	1.24409	.05615	-.10374	.00105	.00039	.00260	4.36060	5.31253	5.31253
GRADIENT	.000004	.03559	-.000314	-.00294	.00032	.00033	.00015	-.00471	-.02970	.32970	

MA-7, LARC INPUT 1031, ROCKWELL PPR CRG. CONF. BINA1

(RPHD12) (06 FEB 74)

## SOURCE DATA

**SIMP = .7243 30.5FT. RNUF = 12.9310 INCHES**  
**LNUF = 7.0000 INCHES RNUL = .0000 INCHES**  
**BNUF = 13.1132 INCHES RNUL = 6.0000 INCHES**  
**SCALE = .0130**

RUN NO.  $\theta/\phi$   $RNU = 1.00$  GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.404	-.000361	.27046	.05732	-.03269	.00046	.00030	.00097	5.31253	6.26445	4.36060
4.000	16.506	-.000277	.36619	.05630	-.03910	.00046	.00033	.00111	5.31253	6.26445	5.31253
4.000	20.569	-.000269	.50163	.05620	-.04756	.00031	.00037	-.00059	5.31253	6.26445	5.31253
4.000	25.662	-.000295	.60324	.05764	-.05906	.00072	.00036	.00046	4.36060	6.26445	5.31253
4.000	30.778	-.000268	.87780	.05604	-.06075	.00076	.00035	-.00106	5.31253	5.31253	
4.000	35.808	-.000211	1.08975	.05400	-.10262	.00101	.00035	-.00125	4.36060	5.31253	5.31253
GRADIENT	.000002	.03563	-.00014	-.00298	.00032	.00033	.00010	-.00472	-.0479	.32728	

DATE 06 FEB 74

## TABULATED SOURCE DATA LARC INPUT 1031

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NA-7, UPUT 1031, ROCKWELL PRR ORB. CONF. BU441

(RPM013) (06 FEB 74)

## REFERENCE DATA:

SREF = .7245 SF-FT. XRP = 12.9510 INCHES  
 LREF = 7.8828 INCHES YRP = .0000 INCHES  
 GREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 7D/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.410	-.00061	.25023	.05740	-.03266	.00046	.00010	.00097	6.26445	6.26445	5.40867
4.0000	16.549	-.00075	.37168	.05804	-.04013	.00046	.00013	.00106	5.31253	6.26445	4.36060
4.0000	20.569	-.00042	.50321	.05872	-.04757	.00051	.00017	.00057	4.36060	6.26445	4.36060
4.0000	25.690	-.00040	.67700	.05663	-.05870	.00076	.00036	.00290	4.36060	6.26445	4.36060
4.0000	30.768	-.00026	.87767	.05641	-.07893	.00076	.00085	.00106	5.31253	6.26445	4.36060
4.0000	35.691	-.00015	1.08344	.05348	-.10363	.00124	.00114	.00114	4.36060	5.31253	5.40867
4.0000	GRADIENT	.00002	.03556	-.00017	-.00295	.00073	.00033	-.00010	-.05466	-.04716	-.00246

NA-7, UPUT 1031, ROCKWELL PRR ORB. CONF. BU441

(RPM014) (06 FEB 74)

## REFERENCE DATA

SREF = .7245 SF-FT. XRP = 12.9510 INCHES  
 LREF = 7.8828 INCHES YRP = .0000 INCHES  
 GREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 7I/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.391	-.00061	.25033	.05812	-.03271	.00046	.00030	.00097	6.26445	6.26445	4.36060
4.0000	16.500	-.00069	.37195	.05843	-.03829	.00046	.00054	.00108	5.31253	6.26445	4.36060
4.0000	20.594	-.00100	.50894	.05891	-.04670	.00071	.00064	.00183	4.36060	6.26445	4.36060
4.0000	25.682	-.00295	.68261	.05665	-.05978	.00072	.00072	.00046	4.36060	6.26445	3.40867
4.0000	30.768	-.00026	.87700	.05637	-.07877	.00076	.00085	-.00106	4.36060	5.31253	3.40867
4.0000	35.691	-.00211	1.08920	.05392	-.10286	.00101	.00185	-.00124	4.36060	5.31253	4.36060
4.0000	GRADIENT	.00003	.03562	-.00018	-.00296	.0002	.00002	-.00011	-.07186	-.04704	-.01481

PARAMETRIC DATA

BETA = .000 RNL = 1.000

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BN441

(RPM015) (06 FEB 74)

## REFERENCE DATA

SWEET =	.7243 59.5FT.	XHYP =	12.9910 INCHES
LUREF =	7.6628 INCHES	YHYP =	.0000 INCHES
BREF =	15.1152 INCHES	ZHYP =	6.0000 INCHES
SCALE =	.3190		

	RUN NO.	72/ 0	RN/L =	1.00	GRADIENT INTERVAL = -5.00/ 5.00						
MACH	ALPHA	BETA	CN	-CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.460	-.00117	.25596	.29758	-.03375	.00042	.00017	.00233	6.26445	6.26445	4.30060
4.0000	16.535	-.000389	.37174	.05620	-.03625	.00046	.00034	.00107	5.31253	6.26445	3.49867
4.0000	20.573	-.00100	.50900	.05815	-.04672	.00071	.00064	.00284	4.36060	6.26445	3.49867
4.0000	25.684	-.000293	.68863	.05721	-.06592	.00072	.00072	.00341	4.36060	6.26445	3.49867
4.0000	30.804	-.00095	.86271	.05612	-.07986	.00072	.00093	.00031	4.36060	5.31253	4.36060
4.0000	35.894	-.000382	1.08868	.05344	-.10280	.00097	.00092	.00017	3.40067	5.31253	4.36060
	GRADIENT	.000001	.03569	-.000017	-.00296	.00002	.00003	-.00008	-.10177	-.04724	.01995

## PARAMETRIC DATA

SWEET =	.000	PO-JET =	600.000
LUREF =	1.000		

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## TABULATED SOURCE DATA LARC UPWT 1031

NA-7, UPWT 1031, ROCKWELL-PRR ORB. CONF. BMTRN1

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(RPPD16) ( 16 JAH 74 )

## REFERENCE DATA

SREF =	.7245 SQ.FT.	XHYP =	12.9310 INCHES
LUREY =	7.8828 INCHES	YHYP =	*.00000 INCHES
BREF =	15.1152 INCHES	ZHYP =	6.00000 INCHES
SCALE =	.0150		

RUN NO. 15/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CIN	CY	PB1	PB2	PB3
2.500	-1.155	-.00034	-.01637	.08726	-.00920	-.00008	.00029	-.00044	106.93403	124.15486	46.96263
2.500	4.111	.02132	.11155	.08401	-.02545	.00037	.00018	-.00092	104.17439	108.93403	53.72226
2.500	8.362	.03307	.23684	.08105	-.04194	.00027	.00027	-.00189	89.99549	93.70320	47.05877
2.500	12.682	.04261	.36629	.07750	-.05662	.00037	.00025	-.00178	61.33768	80.37822	40.39529
2.500	16.967	.05231	.50349	.07430	-.07174	.00043	.00044	-.00192	47.05877	66.09732	34.68372
2.500	21.300	.06172	.64945	.07078	-.08569	.00048	.00055	-.00177	31.82794	52.77034	34.98372
GRADIENT	.00039	.02999	-.00077	-.00381	.00004	-.00003	-.00011	-.1.11572	-5.57028	1.11571	

RUN NO. 19/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CIN	CY	PB1	PB2	PB3
2.950	-2.221	-.00056	-.02482	.07996	-.01159	.00027	.00031	-.00037	74.66466	80.37622	25.16445
2.950	4.014	.00087	.08571	.07675	-.02407	.00032	.00037	-.00102	74.66466	69.90592	28.32024
2.950	8.369	.00176	.20655	.07423	-.03507	.00029	.00047	-.00166	56.57805	57.52997	24.21253
2.950	12.547	.00220	.32286	.07124	-.04634	.00048	.00044	-.00200	38.49143	48.01070	20.40462
2.950	16.765	.00215	.45260	.06894	-.06701	.00054	.00043	-.00199	27.06831	39.44336	17.54904
2.950	21.013	.00228	.59393	.06902	-.07237	.00054	.00042	-.00202	21.35675	30.87602	16.59711
GRADIENT	.00104	.02605	-.00276	-.00295	.00001	.00001	.00015	-.00001	-2.47254	.67433	

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TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMN1

(RPM017) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 SQ.FT. XHPP = 12.9310 INCHES  
UREF = 7.0828 INCHES YHPP = .0000 INCHES  
BREF = 15.1152 INCHES ZHPP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 16/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CT	PB1	PB2	PB3
2.500	-1.173	-5.17613	-.01498	.08868	-.00103	-.00223	-.00071	.07813	148.91496	147.96304	46.10685
2.500	4.046	-5.16899	.10991	.03560	-.02724	-.00112	.00057	.07226	128.92450	130.82355	46.10685
2.500	6.408	-5.15995	.23870	.03140	-.04338	.00076	.00180	.06730	109.89596	114.64559	43.25107
2.500	12.710	-5.15773	.36759	.07765	-.05647	.00262	.00310	.06439	94.65512	100.35669	37.53951
2.500	17.149	-5.15733	.50895	.07391	-.07282	.00411	.00515	.06112	80.37622	85.13586	34.68372
2.500	21.293	-5.15969	.65035	.07023	-.08594	.00535	.00714	.05999	73.71273	71.80888	31.82794
GRADIENT	.00216	.02937	-.000373	-.000450	.00026	.00030	-.00039	-.00039	-4.73259	-4.05651	.00000

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMN1

(RPM018) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 SQ.FT. XHPP = 12.9310 INCHES  
UREF = 7.0828 INCHES YHPP = .0000 INCHES  
BREF = 15.1152 INCHES ZHPP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 16/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CT	PB1	PB2	PB3
2.500	-1.190	-.00345	-.01903	-.08766	-.00063	-.00008	.00033	-.00045	184.13626	51.81841	46.01070
2.500	4.107	.00145	.11419	.08431	-.02639	.00017	.00014	-.00092	172.71314	50.86648	51.81841
2.500	8.403	.00196	.23990	.09124	-.04246	.00025	.00012	-.00129	153.67460	48.01070	46.10685
2.500	12.665	.00265	.36758	.07763	-.05750	.00032	.00043	-.00180	127.02664	42.29914	39.43356
2.500	17.096	.00237	.50776	.07428	-.07209	.00043	.00044	-.00195	99.41176	33.73180	34.68372
2.500	21.303	.00213	.65126	.07071	-.08999	.00049	.00058	-.00208	79.42229	35.63565	33.73180
GRADIENT	.00044	.03007	-.000376	-.000413	.00005	-.00004	-.00011	-.00011	-2.65339	-.22153	.88613

(RPM017) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 SQ.FT. XHPP = 12.9310 INCHES  
UREF = 7.0828 INCHES YHPP = .0000 INCHES  
BREF = 15.1152 INCHES ZHPP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 16/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CT	PB1	PB2	PB3
2.500	-1.190	-.00345	-.01903	-.08766	-.00063	-.00008	.00033	-.00045	184.13626	51.81841	46.01070
2.500	4.107	.00145	.11419	.08431	-.02639	.00017	.00014	-.00092	172.71314	50.86648	51.81841
2.500	8.403	.00196	.23990	.09124	-.04246	.00025	.00012	-.00129	153.67460	48.01070	46.10685
2.500	12.665	.00265	.36758	.07763	-.05750	.00032	.00043	-.00180	127.02664	42.29914	39.43356
2.500	17.096	.00237	.50776	.07428	-.07209	.00043	.00044	-.00195	99.41176	33.73180	34.68372
2.500	21.303	.00213	.65126	.07071	-.08999	.00049	.00058	-.00208	79.42229	35.63565	33.73180
GRADIENT	.00044	.03007	-.000376	-.000413	.00005	-.00004	-.00011	-.00011	-2.65339	-.22153	.88613

(RPM018) ( 16 JAN 74 )

DATE 08 FEB 74

TABULATED SOURCE DATA LANC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTN1

(RPM019) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 SQ.FT. XMRP = 12.9510 INCHES  
LREF = 7.0028 INCHES YMRP = .00000 INCHES  
BREF = 15.1152 INCHES ZMRP = 6.00000 INCHES  
SCALE = .0150

RUN NO. 17/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
2.500	-.214	-9.17955	-.01631	.00874	-.01694	-.00222	-.00068	.07733	215.59865	59.43383	46.10485
2.500	4.136	-5.16595	.11380	.59569	.02796	-.00104	.00168	.07163	180.32056	50.46548	45.15492
2.500	6.381	-5.15979	.23671	.08170	-.04340	.00070	.00175	.06728	152.72267	43.25107	41.34721
2.500	12.719	-5.15757	.36768	.57765	-.05849	.00256	.00305	.06439	135.58799	36.58758	36.58758
2.500	16.973	-5.15725	.50266	.07420	-.07208	.00400	.00510	.06140	121.30908	33.73180	33.73180
2.500	21.288	-5.15921	.64859	.07028	-.08348	.00552	.00707	.05976	109.88596	37.53951	30.87672
	GRADIENT	.00221	.02991	-.00170	-.00391	.00129	.00031	-.00143	-.8.00985	-1.9.951	-.21.883

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTN1

(RPM020) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 SQ.FT. XMRP = 12.9510 INCHES  
LREF = 7.0028 INCHES YMRP = .00000 INCHES  
BREF = 15.1152 INCHES ZMRP = 6.00000 INCHES  
SCALE = .0150

RUN NO. 20/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
2.950	-.228	-.02055	-.02310	.00005	-.01233	.00027	.00031	-.00038	125.11679	29.98409	25.16445
2.950	3.961	.00072	.08415	.07707	-.02427	.00032	.00042	-.00101	115.59732	27.06831	26.11638
2.950	6.246	.00142	.02337	.07438	-.03496	.00035	.00057	-.00161	97.51091	24.21253	24.21253
2.950	12.527	.00220	.32282	.07141	-.04683	.00148	.00144	-.00200	77.52044	18.50596	19.45289
2.950	16.847	.00274	.45418	.06881	-.06028	.00055	.00046	-.00235	55.62612	18.50596	17.54904
2.950	21.077	.00317	.59479	.06555	-.07255	.00048	.00047	-.00204	45.15492	20.40482	18.50596
	GRADIENT	.00030	.02561	-.00071	-.00285	.00001	.00003	-.00015	-2.27353	-.68216	.22735

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BATN1

(RFM021) ( 16 JAN 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XRP = 12.9510 INCHES  
 LREF = 7.6620 INCHES YRP = .0000 INCHES  
 DREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 1/0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.418	-.000005	.24297	.06200	-.02922	.00253	.00554	-.00147	8.02977	6.12291	2.31821
4.000	16.526	-.000221	.36044	.06053	-.03430	.00282	.00551	-.00031	7.07784	6.12291	2.31821
4.000	20.559	-.000332	.49785	.06095	-.04278	.00375	.00645	-.00093	5.17399	6.12291	2.31821
4.000	25.703	-.000357	.67676	.05949	-.05512	.00317	.00656	-.00098	5.17399	6.12291	2.31821
4.000	35.767	-.000316	.87078	.05653	-.07587	.00285	.00642	-.00101	6.12591	4.22206	2.31821
4.000	35.952	.000243	1.07668	.05301	-.09886	.00261	.00678	-.00282	5.17399	4.22206	2.31821
GRADIENT	.000302	.03566	-.00036	.03566	-.01297	.00231	.00621	-.00033	-.09922	-.09425	-.09200

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BATN1

## REFERENCE DATA

SREF = .7245 SQ.FT. XRP = 12.9510 INCHES  
 LREF = 7.6620 INCHES YRP = .0000 INCHES  
 DREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 8/0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.391	-2.51284	.24274	.06210	-.02733	.00114	.00156	.02860	8.98170	7.07784	2.31821
4.000	16.406	-2.51291	.35945	.06115	-.03422	.00190	.00227	.02756	8.02977	6.12291	1.36628
4.000	20.569	-2.51345	.49640	.06076	-.04071	.00237	.00284	.02802	8.02977	6.12291	1.36628
4.000	25.659	-2.51356	.67556	.05699	-.05488	.00262	.00379	.02671	7.07784	5.17399	1.36628
4.000	30.764	-2.51287	.86311	.05755	-.07259	.00418	.00289	.02694	6.12591	4.22206	1.36628
4.000	35.860	-2.51157	1.07429	.05357	-.09652	.00470	.00415	.02262	8.02977	5.17399	1.36628
GRADIENT	.000304	.03546	-.00034	.03546	-.00295	.00115	.00109	-.01200	-.06693	-.06231	-.02729

RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

RN/L = 1.0000 PO-JET = .000

RN/L = 1.0000 PO-JET = .000

PARAMETRIC DATA

(RFM022) ( 16 JAN 74 )

MA-7, UPUT 1001, ROCKWELL PRR CRN. CONF. BMTHI - (RPMHD23) (16 JAN 74)

## REFERENCE DATA

SREF = .7243 30. FT. XNP = 12.9510 INCHES  
 LREF = 7.0000 INCHES YNP = .0000 INCHES  
 DREF = 15.1152 INCHES ZNP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 7/0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CYN	CY	PB1	PB2	PB3
4.0000	12.476	-5.04108	.24179	.06183	-.02720	.00255	.00004	.05958	10.88555	6.98170	2.31821
4.0000	16.305	-5.04104	.35824	.06137	-.03404	.00393	.00451	.05370	9.93362	8.02977	1.36626
4.0000	20.856	-5.04190	.50059	.06051	-.04149	.00503	.00547	.05429	8.98170	8.02977	1.36626
4.0000	25.667	-5.04080	.66776	.05879	-.05338	.00630	.00667	.05048	8.02977	7.07784	1.36626
4.0000	30.822	-5.04013	.88649	.05813	-.07325	.00839	.00854	.04934	7.07784	7.07784	1.36626
4.0000	35.947	-5.03696	1.07190	.05411	-.09699	.00891	.00909	.04509	7.07784	8.98170	1.36626
4.0000	GRADIENT	.00009	.05543	-.00031	-.00293	.00028	.00019	-.00044	-.11111	-.01961	-.02723

MA-7, UPUT 1001, ROCKWELL PRR CRN. CONF. BMTHI - (RPMHD24) (16 JAN 74)

## REFERENCE DATA

SREF = .7243 30. FT. XNP = 12.9510 INCHES  
 LREF = 7.0000 INCHES YNP = .0000 INCHES  
 DREF = 15.1152 INCHES ZNP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 11/0 RN/L = 2.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CYN	CY	PB1	PB2	PB3
4.0000	12.704	-.0430	.25423	.06078	-.03157	.00018	.00030	.02240	20.40482	17.54904	5.17399
4.0000	16.660	-.04464	.37562	.05979	-.03934	.00034	.00043	.03235	17.53904	14.69326	5.17399
4.0000	21.076	-.04461	.50519	.05922	-.04661	.00034	.00049	.00228	14.69326	12.78940	5.17399
4.0000	26.363	-.00390	.69111	.05872	-.06244	.00034	.00052	.00178	11.83748	11.83748	5.17399
4.0000	31.700	-.00346	.89174	.05664	-.08002	.00039	.00056	.00173	12.78940	13.74133	5.17399
4.0000	37.056	-.00230	1.11015	.05352	-.10417	.00071	.00067	.00052	12.78940	9.933362	5.17399
4.0000	GRADIENT	.00006	.05521	-.00027	-.00294	.00022	.00001	-.00027	-.3238	-.23871	.00000

DATE OF PRT 74

TABULATED SOURCE DATA LARC INPUT 1031

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MA-7,INPUT 1031,ROCKWELL PRR ORB. CONF. BURN1

(RPM025) ( 16 JAN 74 )

## REFERENCE DATA

SHEP = .7245 96.FT. XREF = 12.9510 INCHES  
 LREF = 7.0028 INCHES YREF = .0000 INCHES  
 DREF = 15.1152 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 13 / 0 RN/L = 4.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.955	-.00504	.26131	.06052	-.03215	.00244	.00033	.00151	30.87602	30.87602	8.98170
4.000	17.395	-.00427	.38513	.05937	-.04001	.00241	.00040	.00106	24.21253	25.16445	8.98170
4.000	21.804	-.00392	.52037	.05893	-.04730	.00246	.00044	.00088	23.26360	19.45289	8.98170
4.000	27.212	-.00260	.71743	.05735	-.06321	.00251	.00053	.00023	14.69326	17.54924	8.98170
GRADIENT	.00204	-.00222	-.00215	.00204	-.00221	.00201	.00021	-.00029	-1.56054	-.95339	.00000

MA-7,INPUT 1031,ROCKWELL PRR ORB. CONF. BURN1

(RPM026) ( 16 JAN 74 )

## REFERENCE DATA

SHEP = .7245 96.FT. XREF = 12.9510 INCHES  
 LREF = 7.0028 INCHES YREF = .0000 INCHES  
 DREF = 15.1152 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 2 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.425	-.00063	.23732	.06141	-.02613	.00025	.00041	-.00008	7.07784	3.27013	2.31821
4.000	16.516	-.00077	.36023	.06054	-.03431	.00024	.00038	.00004	7.07784	3.27013	2.31821
4.000	20.568	-.00069	.49152	.06038	-.04166	.00047	.00032	.00047	8.02977	3.27013	2.31821
4.000	25.670	-.00037	.67075	.05732	-.05581	.00023	.00065	-.00099	8.98170	3.27013	2.31821
4.000	30.773	-.00071	.86466	.05586	-.07476	.00033	.00029	.00033	6.12391	3.27013	2.31821
4.000	35.869	-.00010	1.07041	.05250	-.09584	.00005	.00065	-.00132	6.12391	3.27013	2.31821
GRADIENT	.00202	.03555	-.00038	.00290	-.00001	.00001	.00001	-.00000	-.04475	.00000	-.00000

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TABULATED SOURCE DATA LARC UPNT 1031

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(RPM027) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 50.FT.  
LREF = 7.8620 INCHES  
BREF = 15.1152 INCHES  
SCALE = .0150

RUN NO. 12/ 0 RNL = 2.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.956	-.00436	.25661	.06091	-.03135	.00265	.00030	.00240	.26.02024	7.07734	5.17399
4.000	16.966	-.00464	.37443	.05963	-.03941	.00214	.00043	.00236	22.39867	6.12291	5.17399
4.000	21.111	-.00566	.50716	.05915	-.04635	.00036	.00047	.00179	22.39867	6.12291	5.17399
4.000	26.401	-.00346	.68722	.05831	-.05907	.00019	.00064	.00131	27.06831	6.12591	5.17399
4.000	31.725	-.00341	.86793	.05623	-.07929	.00039	.00037	.00168	25.16445	6.12591	5.17399
4.000	37.053	-.00249	1.10831	.05332	-.10364	.00123	.00082	.00346	15.64518	6.12591	5.17399
GRADIENT		.00206	.03496	-.03230	-.03291	-.00010	-.00012	-.00017	-.28447	-.02616	-.00000

(RPM028) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 50.FT.  
LREF = 7.8620 INCHES  
BREF = 15.1152 INCHES  
SCALE = .0150

RUN NO. 14/ 0 RNL = 4.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.978	-.00443	.28251	.06019	-.03199	.00040	.00036	.00121	48.96263	10.86559	9.93362
4.000	17.306	-.00429	.38513	.05938	-.03963	.00045	.00040	.00107	45.39529	9.93362	8.98170
4.000	21.636	-.00406	.52202	.05859	-.04755	.00051	.00049	.00088	42.29914	9.93362	8.98170
4.000	27.193	-.00272	.71516	.05720	-.06239	.00037	.00057	.00122	42.29914	9.93362	9.93362
GRADIENT		.00012	.03199	-.00023	-.00213	-.00002	-.00002	-.00007	-.36807	-.05866	.00514

(RPM029) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 50.FT.  
LREF = 7.8620 INCHES  
BREF = 15.1152 INCHES  
SCALE = .0150

RUN NO. 14/ 0 RNL = 4.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.978	-.00443	.28251	.06019	-.03199	.00040	.00036	.00121	48.96263	10.86559	9.93362
4.000	17.306	-.00429	.38513	.05938	-.03963	.00045	.00040	.00107	45.39529	9.93362	8.98170
4.000	21.636	-.00406	.52202	.05859	-.04755	.00051	.00049	.00088	42.29914	9.93362	8.98170
4.000	27.193	-.00272	.71516	.05720	-.06239	.00037	.00057	.00122	42.29914	9.93362	9.93362
GRADIENT		.00012	.03199	-.00023	-.00213	-.00002	-.00002	-.00007	-.36807	-.05866	.00514

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TABULATED SOURCE DATA LARC UPNT 1031

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HA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BATN1

(RPHD29) ( 16 JAN 74 )

REFERENCE DATA

SQRT = .7245 SQ.FT. XHYP = 12.9510 INCHES  
LINF = 7.8628 INCHES YHYP = .0000 INCHES  
BDFP = 19.1132 INCHES ZHYP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 3/ 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00  
  
MACH ALPHA BETA CA CLM CBL CYN CY PB1 PB2 PB3  
4.0000 12.428 -.0011 .23741 .06065 -.02624 .00003 .00127 32.77987 3.27013 2.31821  
4.0000 16.533 -.00134 .35424 .05981 -.03316 .00034 .00144 28.02234 3.27013 2.31821  
4.0000 20.544 -.00041 .48571 .05860 -.04053 .00020 .00104 20.40462 3.27013 2.31821  
4.0000 25.709 -.02113 .66469 .05763 -.05292 -.00101 .00096 .00022 11.83748 3.27013 2.31821  
4.0000 30.781 -.00092 .85276 .05319 -.07280 .00086 .00074 7.07784 3.27013 2.31821  
4.0000 35.696 -.02397 1.06432 .05177 -.09668 -.00119 .00098 -.00011 6.12591 3.27013 2.31821  
GRADIENT .00021 .03525 -.00037 -.00295 -.00036 .00033 -.00005 -1.22327 .00000 .00000

HA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BATN1

(RPHD30) ( 16 JAN 74 )

REFERENCE DATA

SQRT = .7245 SQ.FT. XHYP = 12.9510 INCHES  
LINF = 7.8628 INCHES YHYP = .0000 INCHES  
BDFP = 19.1132 INCHES ZHYP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 4/ 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00  
  
MACH ALPHA BETA CA CLM CBL CYN CY PB1 PB2 PB3  
4.0000 12.445 -.00173 .23726 .06010 -.02620 -.00007 .00013 .00287 35.63565 3.27013 2.31821  
4.0000 16.524 -.00131 .35426 .05873 -.03125 -.00027 .00025 .00039 27.06331 3.27013 2.31821  
4.0000 20.537 -.00199 .49372 .05868 -.03962 -.00123 .00064 .00152 12.78940 3.27013 2.31821  
4.0000 25.644 -.00190 .66516 .05744 -.05300 -.00139 .00127 .00144 9.93362 3.27013 2.31821  
4.0000 30.645 -.00210 .86440 .05535 -.07110 -.00165 .00069 .00275 7.07784 2.31821 2.31821  
4.0000 35.699 -.00211 1.06440 .05180 -.09294 -.00174 .00093 .00260 6.12591 2.31821 2.31821  
GRADIENT -.00003 -.03524 -.00032 -.00285 -.00006 .00013 .00003 -1.24133 -.04724 .001725

PARAMETRIC DATA

BETA = .000 RNL = 1.000 PO-JET = 166.000

PARAMETRIC DATA

BETA = .000 RNL = 1.000 PO-JET = 310.000

DATE 06 FEB 74

## TABLED SOURCE DATA LARC UPUT 1031

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(RPP031) ( 26 FEB 74 )

MA-7, UPUT 1031, ROCKWELL PNR ORB. CONF. BURNH

## REFERENCE DATA

**UTP =** .7243 30. FT. **THRP =** 12.9910 INCHES  
**LND =** 7.6000 INCHES **TRHP =** .0000 INCHES  
**GRD =** 15.1152 INCHES **DHP =** 0.0000 INCHES  
**SCALE =** .0150

RUN NO. S / O RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	BETA	ALPHA	CA	CLN	CLL	CYN	CT	PB1	PB2	PB3
12.410	.04680	.23922	.00167	.00469	.00293	-.00465	-.04685	36.56756	3.27013	2.31821
16.527	.04683	.36824	.00234	.00294	.00368	-.04573	14.69326	3.27013	2.31821	
20.538	.04686	.49400	.00306	.00463	.00469	-.00447	8.98170	2.31821	1.36626	
25.608	.04688	.68749	.00362	.00562	.00586	-.04299	6.12591	2.31821	1.36626	
30.705	.04693	.85036	.00495	.00905	.01012	-.03611	5.17399	2.31821	1.36626	
GRADIENT	.00007	.04340	.00769	.09253	.01077	-.03676	.03623	4.22206	2.31821	2.31821
		.00006	.03922	.00032	-.00281	-.00017	.00236	-1.13161	-.04665	-.01465

(RPP032) ( 16 JAN 74 )  
MA-7, UPUT 1031, ROCKWELL PNR ORB. CONF. BURNH

## REFERENCE DATA

**UTP =** .7243 30. FT. **THRP =** 12.9910 INCHES  
**LND =** 7.6000 INCHES **TRHP =** .0000 INCHES  
**GRD =** 15.1152 INCHES **DHP =** 0.0000 INCHES  
**SCALE =** .0150

RUN NO. S / O RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	BETA	ALPHA	CA	CLN	CLL	CYN	CT	PB1	PB2	PB3
12.410	-2.51328	.24274	.06195	-.02735	.00110	.00121	.02999	36.56756	4.22206	1.36626
16.527	-2.51344	.35995	.06067	-.03235	.00138	.00215	.02885	29.92019	3.27013	1.36626
20.538	-2.51360	.48476	.05844	-.03845	.00165	.00249	.02939	36.56756	3.27013	1.36626
25.608	-2.51367	.67019	.05194	-.05194	.00246	.00446	.02642	15.64116	3.27013	1.36626
30.705	-2.51385	.85766	.05645	-.06972	.00224	.00364	.02802	7.07784	2.31821	1.36626
GRADIENT	.00012	.51241	1.06239	.03219	-.09256	.00251	.02568	6.12591	2.31821	1.36626
		.00012	.03509	-.00038	-.00276	.00235	.02114	-.00223	-.1.47375	-.07445

(RPP033) ( 16 JAN 74 )

## PARAMETRIC DATA

BETA = 5.000 RNL = 1.000

	PB1	PB2	PB3
	36.56756	3.27013	2.31821
	14.69326	3.27013	2.31821
	8.98170	2.31821	1.36626
	6.12591	2.31821	1.36626
	5.17399	2.31821	1.36626
	4.22206	2.31821	2.31821
	-1.13161	-.04665	-.01465

BETA = -2.500 RNL = 1.000

	PB1	PB2	PB3
	36.56756	4.22206	1.36626
	29.92019	3.27013	1.36626
	15.64116	3.27013	1.36626
	10.64116	3.27013	1.36626
	7.07784	2.31821	1.36626
	6.12591	2.31821	1.36626
	5.17399	2.31821	1.36626
	4.22206	2.31821	2.31821
	1.13161	-.04665	-.01465

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TABULATED SOURCE DATA LARC UPNT 1031

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MA-7,UPNT 1031,ROCKWELL PNR ORB. CONF. BMTN1

(RPM033) ( 16 JAN 74 )

## REFERENCE DATA

**SURF** = .7843 30.5FT. 200F = 12.9510 INCHES  
**LNDP** = 7.6628 INCHES 100F = .0000 INCHES  
**GNDP** = 15.1152 INCHES 200F = 6.0000 INCHES  
**SCALE** = .0150

RUN NO. 6/0 RVL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CH	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.430	-5.04032	.24181	.08155	-.02710	.02259	.00316	.03456	43.25107	3.27013	2.31821
4.000	15.330	-5.04036	.36416	.06114	-.03514	.02059	.00431	.03539	36.69143	3.27013	2.31821
4.000	21.642	-5.04190	.49477	.06003	-.04040	.02479	.00548	.03528	29.92409	3.27013	2.31821
4.000	25.857	-5.04083	.68014	.05714	-.05151	.02691	.00691	.03522	34.68372	3.27013	2.31821
4.000	30.761	-5.03982	.85579	.05821	-.07116	.02629	.00736	.04791	15.64516	3.27013	1.36628
4.000	35.866	-5.03911	1.03508	.05221	-.09229	.02677	.00847	.04472	11.63746	3.27013	2.31821
GRADIENT			.03491	-.03039	-.03272	.02116	.00322	-.00044	-.1.34583	.00000	-.01736

MA-7,UPNT 1031,ROCKWELL PNR ORB. CONF. BMTN1

(RPM034) ( 16 JAN 74 )

## REFERENCE DATA

**SURF** = .7843 30.5FT. 200F = 12.9510 INCHES  
**LNDP** = 7.6628 INCHES 100F = .0000 INCHES  
**GNDP** = 15.1152 INCHES 200F = 6.0000 INCHES  
**SCALE** = .0150

RUN NO. 912/0 RVL = 2.39 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CH	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.717	-.030495	.25681	.08067	-.03134	.02024	.00265	.03267	73.71273	6.12591	6.12591
4.000	15.660	-.030490	.37445	.09933	-.03675	.02034	.00266	.03259	76.56551	6.12591	6.12591
4.000	21.129	-.030514	.50522	.15615	-.04593	.02017	.00245	.03271	53.72226	7.07784	7.07784
4.000	26.346	-.030410	.69550	.05755	-.05673	.02073	.00198	.03117	35.63565	6.12591	6.12591
4.000	31.860	-.030416	.84629	.05553	-.07636	.02065	.00269	.03151	18.50296	6.12591	5.17399
4.000	37.039	-.030414	1.10277	.05276	-.10219	.02091	.00291	.03124	10.88555	6.12591	5.17399
GRADIENT			.03465	-.03004	-.03267	.02006	.00034	-.00007	-.2.96226	-.03274	-.03274

## PARAMETRIC DATA

**BETA** = -.0000  
**RVL** = 1.000

(RPM034) ( 16 JAN 74 )

## PARAMETRIC DATA

**BETA** = .0000  
**RVL** = 3.000

(RPM034) ( 16 JAN 74 )

DATE OF PCP 74

TRANSLATED SOURCE DATA LAST UPNT 1931

MA-7, UPNT 1051, ROCKWELL, PER OBS. CONF. BARTH

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(094055) (16 JAN 74)

SOURCE DATA

BETA =	.7845 SH-JET.	SHR =	12.9510 INCHES
SHR =	7.0000 INCHES	HHR =	.0000 INCHES
SHR =	15.1132 INCHES	DHR =	6.0000 INCHES
SCALE =	.0190		

RUN NO. 10/0 RUNL = 1.00 GRADIENT INTERVAL = -.5.00/ .5.00

NUCH	ALPHA	BETA	CH	CA	CLW	CRD	CTW	CT	PB1	PB2	PB3
4.000	12.416	-.00036	.23785	.00033	-.02447	-.00139	-.00285	.00661	.24.60372	3.27013	1.36626
4.000	16.303	-.00067	.34923	.05696	-.02651	-.00234	.00207	.00665	21.35675	3.27013	1.36626
4.000	20.608	-.00119	.46640	.05626	-.03697	-.00265	.00275	.00669	11.63746	3.27013	1.36626
4.000	23.687	-.00161	.60023	.05660	-.04663	-.00362	.00319	.00677	8.98170	2.31621	1.36626
4.000	30.762	-.00204	.85375	.05534	-.06719	-.00505	.00423	.00661	5.12591	2.31621	1.36626
4.000	39.937	-.002410	1.06516	.05251	-.09131	-.00553	.00516	.00649	5.17399	2.31621	1.36626
	GRADIENT								.00004		
									.00005		

PARAMETRIC DATA

BETA = .000 PO-JET = 600.000

RHL = 1.000

NA-7, UPUT 1031, ROCKWELL PRR CRB. CONF. BMTM

(16 JAN 74)

## REFERENCE DATA

WGT =	.7243 LB/FT.	WGT =	12.9510 INCHES
LWT =	7.0028 INCHES	WGT =	.00000 THICKES
WGT =	15.1152 INCHES	ZWT =	6.00000 THICKES
SCALE =	.0150		

RUN NO. 37/0 RHL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CH	CA	CLW	CLL	CTN	CV	PB1	PB2	PB3
2.900	-.216	.03140	-.01990	.00722	-.00619	-.00016	.00005	-.00113	105.86569	129.68486	53.51070
2.900	4.070	.00295	.10871	.08419	-.02567	.00010	.00019	-.00146	101.10705	111.57825	56.36648
2.900	6.490	.00360	.23793	.06107	-.04265	.00022	.00025	-.00212	95.87622	95.39549	46.75107
2.900	12.603	.00431	.36432	.07751	-.05692	.00034	.00032	-.00245	60.17119	82.26851	45.99143
2.900	16.702	.00446	.30251	.07429	-.07159	.00027	.00027	-.00195	44.94336	67.78961	55.42079
2.900	21.308	.00361	.64999	.07981	-.08611	.00028	.00019	-.00213	50.66445	53.51070	35.42079
GRADIENT	.00027	.03000	-.00071	-.03008	-.00027	-.00024	-.00028	-.1.11051	-4.21993	.66630	

RUN NO. 39/0 RHL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CH	CA	CLW	CLL	CTN	CV	PB1	PB2	PB3
2.900	-.162	.00031	-.02420	.00012	-.01173	.00026	.00021	-.00045	71.59732	83.97237	27.81667
2.900	4.383	.00157	.00384	.07701	-.02450	.00026	.00014	-.00129	72.54224	72.34924	28.76360
2.900	6.363	.00131	.20446	.07459	-.03550	.00022	.00017	-.00119	55.41456	59.22226	23.90482
2.900	12.671	.00206	.32324	.07130	-.04849	.00040	.00022	-.00137	36.37602	48.75107	24.00796
2.900	16.700	.00257	.49020	.06893	-.06020	.00041	.00025	-.00165	26.89615	41.13565	19.24133
2.900	21.006	.00295	.59210	.06008	-.07250	.00054	.00030	-.00200	20.19326	32.56831	19.24133
GRADIENT	.00030	.02346	-.00073	-.03393	.00020	.00019	-.00020	-.22414	-2.68969	.22414	

DATE OF PFB 74

TABULATED SOURCE DATA LARC UPNT 1031

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NA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BM114

(RPM037) ( 16 JAN 74 )

## REFERENCE DATA

SREF = .7245 50. FT. XHSP = 12.9510 INCHES  
 LREF = 7.6828 INCHES YHSP = .0000 INCHES  
 SREF = 15.1152 INCHES ZHSP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 4D/ D RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLW	CBL	CYN	CY	PB1	PB2	PB3
2.950	-.234	-.00029	-.03038	.07732	-.00860	.00013	.00017	-.00008	72.54924	84.92429	32.56831
2.950	4.046	.00118	.07963	.07458	-.02128	.00003	.00026	-.00007	74.45310	72.56924	32.56831
2.950	6.207	.00012	.19590	.07269	-.03237	.00021	.00030	-.00046	56.36646	59.22226	28.76360
2.950	12.465	.00145	.31293	.06875	-.04301	.00015	.00018	-.00100	36.37602	48.75107	26.85675
2.950	16.773	.00164	.41743	.06628	-.05669	.00009	.00014	-.00099	25.90492	41.15565	23.04904
2.950	21.034	.00095	.58654	.06342	-.06840	-.00016	.00022	-.00022	21.14516	33.52024	23.01304
	GRADIENT	.00234	.02563	-.00064	-.00296	-.00002	.00002	-.00021	.44483	-2.89137	.00000

NA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BM114

(RPM038) ( 16 JAN 74 )

## REFERENCE DATA

SREF = .7245 50. FT. XHSP = 12.9510 INCHES  
 LREF = 7.6828 INCHES YHSP = .0000 INCHES  
 SREF = 15.1152 INCHES ZHSP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 3D/ D RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLW	CBL	CYN	CY	PB1	PB2	PB3
2.500	-.174	.00078	-.02388	.08457	-.00583	.00019	.00052	-.00079	104.91476	129.66486	57.31641
2.500	4.069	.00325	.10226	.08774	-.02268	-.00013	.00037	-.00115	102.05898	111.57825	55.41456
2.500	6.332	.00291	.23016	.07953	-.03963	-.00001	.00009	-.00149	87.78007	96.34742	48.75107
2.500	12.641	.00269	.35751	.07515	-.05301	.00004	.00013	-.00152	60.17419	83.02524	45.8119
2.500	16.985	.00307	.49577	.07143	-.06773	-.00006	.00020	-.00166	44.94336	67.78961	43.03951
2.500	21.268	.00273	.64131	.06781	-.08095	-.00044	.00030	-.00159	33.52124	60.17419	43.03951
	GRADIENT	.00035	.02973	-.00067	-.00401	-.00001	-.00006	-.00018	-.67306	-4.26569	-.44870



DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF. BMTH4

(RPHD41) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 SQ.FT. XHPP = 12.9210 INCHES  
UREF = 7.8826 INCHES YHPP = .00000 INCHES  
UREF = 15.1152 INCHES ZHPP = 6.00000 INCHES  
SCALE = .0150

RUN NO. 34 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.434	-2.51257	.25533	.06127	-.03004	.00167	.00200	.02637	8.77013	7.81821	4.01050
4.000	16.513	-2.51333	.37603	.06977	-.03615	.00258	.00281	.02902	7.81821	7.81821	4.01050
4.000	20.576	-2.51316	.51758	.06296	-.04798	.00310	.00340	.02805	6.86628	6.86628	4.01050
4.000	25.713	-2.51365	.70377	.05840	-.06214	.00335	.00428	.02810	5.91335	6.86628	4.01050
4.000	35.775	-2.51315	.89086	.05683	-.07982	.00525	.00537	.02841	5.91335	6.86628	4.01050
4.000	35.928	-2.51181	1.10695	.05218	-.10295	.00562	.00463	.02402	6.86628	5.91435	4.01050
	GRADIENT	.000013	.03626	-.00036	-.00397	.00016	.00016	-.00015	-.00014	-.07441	.00000

MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF. BMTH4

(RPHD42) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 SQ.FT. XHPP = 12.9310 INCHES  
UREF = 7.8826 INCHES YHPP = .00000 INCHES  
UREF = 15.1152 INCHES ZHPP = 6.00000 INCHES  
SCALE = .0150

RUN NO. 31 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.474	-5.04082	.26044	.06254	-.03198	.00353	.00348	.05583	10.67599	9.72206	4.01050
4.000	16.543	-5.04132	.37753	.06158	-.03895	.00452	.00484	.05521	10.67599	8.77013	4.01050
4.000	20.673	-5.04205	.52259	.06115	-.04892	.00572	.00570	.05579	8.77013	8.77013	4.01050
4.000	25.667	-5.04107	.69724	.05923	-.06079	.00704	.00717	.05194	7.81821	7.81821	4.01050
4.000	30.753	-5.04042	.88971	.05803	-.07953	.00923	.00793	.05987	6.86628	7.81821	4.01050
4.000	35.916	-5.03925	1.10612	.05389	-.10268	.01039	.01849	.04659	6.86628	8.77013	4.01050
	GRADIENT	.000017	.03613	-.00034	-.00302	.00029	.00029	-.00039	-.18904	-.04958	.00000

MA-7, UPWT 1031, ROCKWELL PRR CRB. CONF. BMTRNA

(RPMHD43) ( 16 JAN 74 )

## REFERENCE DATA

SREF =	.7245 SQ.FT.	XMRP =	12.9510 INCHES		BETA =	.0000	PO-JET =	.0000
LREF =	7.8828 INCHES	YMRP =	.0000 INCHES	RNL =				
BREF =	15.1152 INCHES	ZMRP =	6.0000 INCHES					
SCALE =	.0150							
MACH	ALPHA	BE/A	CN	CA	CLM	CBL	CYN	PB1
4.000	12.676	-.000069	.25616	.06083	-.03331	.000040	-.00002	21.14518
4.000	16.865	-.000083	.37388	.05956	-.04145	.000056	.000047	17.33748
4.000	21.079	-.000062	.50918	.05896	-.04921	.000057	-.000050	14.48170
4.000	26.390	-.000021	.69695	.05837	-.06299	.000051	.000061	11.62591
4.000	31.711	-.000069	.91438	.05615	-.08436	.00104	.000036	11.62592
4.000	37.039	-.000059	1.12493	.05300	-.10886	.00093	.000072	11.62591
GRADIENT	.000036	.03575	-.000029	-.000016	.000022	.000001	-.000004	-.27670
								.000000

MA-7, UPWT 1031, ROCKWELL PRR CRB. CONF. BMTRNA

(RPMHD44) ( 16 JAN 74 )

## REFERENCE DATA

SREF =	.7245 SQ.FT.	XMRP =	12.9510 INCHES		BETA =	.0000	PO-JET =	.0000
LREF =	7.8828 INCHES	YMRP =	.0000 INCHES	RNL =				
BREF =	15.1152 INCHES	ZMRP =	6.0000 INCHES					
SCALE =	.0150							
MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	PB1
4.000	12.982	-.000025	.26458	.06022	-.03322	.000041	.000000	29.71253
4.000	17.299	-.000313	.38722	.05926	-.04095	.000051	.000044	23.04904
4.000	21.633	-.00256	.52571	.05827	-.04901	.000047	.000055	22.09711
4.000	27.151	-.00187	.71905	.05708	-.06445	.000058	.000032	15.43362
GRADIENT	.000010	.03211	-.00222	-.00219	.00001	.000001	-.000055	-.93624
								-.05362

(RPMHD45) ( 16 JAN 74 )

DATE 08 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMNT4

(RPHD45) ( 16 JAN 74 )

## REFERENCE DATA

SREF = .7245 50.5FT. XRP = 12.9510 INCHES  
 LREF = 7.0026 INCHES YRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 27 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.433	-.000248	.23260	.05972	-.02271	-.000003	.000098	.00098	6.86626	7.81821	4.01050
4.000	16.513	-.000262	.35546	.05921	-.02339	-.000014	.000099	.00142	6.86628	6.86628	4.01050
4.000	23.577	-.000273	.49315	.03929	-.04369	.000119	.000113	.00178	5.91435	7.81821	4.01050
4.000	25.631	-.000292	.67508	.05659	-.05876	-.00004	.000060	.00176	5.91435	6.86628	4.96243
4.000	35.775	-.000371	.86837	.05462	-.07763	.00044	.00036	.00175	5.91435	5.91435	4.01050
4.000	35.913	.00024	1.07853	.05058	-.10164	.00035	.00129	-.00135	4.96243	5.91435	4.96243
4.000		.00002	.03605	-.00358	-.03529	.00031	.00034	-.00007	-.07139	-.08176	.03595

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMNT4

(RPHD46) ( 16 JAN 74 )

## REFERENCE DATA

SREF = .7245 50.5FT. XRP = 12.9510 INCHES  
 LREF = 7.0026 INCHES YRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 35 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.416	-.00253	.25048	.05994	-.02317	-.00037	.00032	.00503	7.81821	7.81821	4.01050
4.000	16.522	-.00293	.36767	.05523	-.03029	-.00066	.00074	.00543	6.86628	7.81821	4.01050
4.000	20.617	-.00285	.50735	.05448	-.04005	-.00082	.00156	.01438	5.91435	6.86628	4.01050
4.000	25.698	-.00262	.68809	.05242	-.05331	-.00173	.00281	.00282	4.96243	4.96243	4.01050
4.000	30.777	-.00245	.88707	.05124	-.07335	-.00125	.00298	.00276	4.96243	4.96243	4.01050
4.000	35.914	-.00183	1.09754	.04223	-.09737	-.00144	.00274	.00110	4.01050	4.01050	4.01050
4.000		.00093	.03624	-.00035	-.001313	-.00034	.00011	-.00018	-.15385	-.14879	.01010

PARAMETRIC DATA

BETA = .000 RN/L = 1.000

DATE 08 FEB 74

TABULATED : JRCCE DATA LARC UPWT 1031

MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF. BM7M4

(RPH047) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 50.FT. XMRP = 12.9510 INCHES  
LREF = 7.8828 INCHES YMRP = .0000 INCHES  
BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 22/ 0 RN/L = 5.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CYN	CY	FB1	PB2	PB3
4.000	12.674	-.00150	.25285	.05850	-.003066	.00006	.000117	.00086	18.2894D	19.24133	9.72206
4.000	16.908	-.00099	.37219	.05724	-.03787	-.00021	.00030	.00036	16.38555	16.36555	8.77013
4.000	21.069	-.00154	.50633	.05685	-.04596	.00006	.00034	.00077	12.57784	14.48170	9.72206
4.000	26.454	-.00135	.69426	.05605	-.06238	.00000	.00067	.00126	13.52977	14.48170	8.77013
4.000	31.723	-.000215	.92037	.05416	-.08168	.00050	.00049	.00029	11.62291	11.62591	8.77013
4.000	37.130	.00155	1.12218	.05113	-.10896	.00024	.00126	.00247	11.62591	11.62591	8.77013
	GRADIENT	.000011	.03568	-.00028	-.00308	.00001	.00004	-.00011	-.26380	-.29976	-.05343

MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF. BM7M4

(RPH048) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 50.FT. XMRP = 12.9510 INCHES  
LREF = 7.8828 INCHES YMRP = .0000 INCHES  
BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 25/ 0 RN/L = 5.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CYN	CY	FB1	PB2	PB3
4.000	12.928	-.00410	.25886	.05793	-.03013	.00016	.00026	.00142	28.76060	32.56831	15.43382
4.000	17.287	-.003317	.38276	.05676	-.03734	.00027	.00030	.00100	22.09711	26.35675	14.48170
4.000	21.649	-.00287	.52072	.05597	-.04574	-.00022	.00041	.00077	20.19326	22.09711	14.48170
4.000	27.154	-.00145	.71339	.05484	-.06139	.00021	.00031	-.00013	21.14318	25.90482	14.48170
	GRADIENT	.00016	.03200	-.00021	-.00219	-.00001	.00003	-.00011	-.50559	-.49579	-.05832

(RPH047) ( 16 JAN 74 )

PARAMETRIC DATA

BETA = .000 RN/L = 3.000

PO-JET = 103.000

(RPH048) ( 16 JAN 74 )

PARAMETRIC DATA

BETA = .000 RN/L = 5.000

PO-JET = 178.000

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BM/TA4 (RPMD49) (16 JAN 74)

## REFERENCE DATA

SUPER = .7245 SF.FT.	XRP = 12.9510 INCHES
LINF = 7.8828 INCHES	YRP = .0000 INCHES
BREF = 15.1152 INCHES	ZRP = 6.0000 INCHES
SCALE = .0150	

RUN NO. 26/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.421	-.00119	.22126	.05180	-.01945	-.00168	.00138	.00076	6.86628	7.81821	4.01050
4.000	16.539	-.00265	.33638	.05105	-.02465	-.00236	.00272	-.00161	6.86626	6.86626	4.01050
4.000	20.362	-.00310	.47633	.05079	-.03452	-.00295	.00412	-.00425	5.91435	5.91435	4.01050
4.000	25.663	-.00312	.65863	.04915	-.04776	-.00362	.00495	-.00577	4.96243	4.96243	4.01050
4.000	30.808	-.00306	.85723	.04758	-.06770	-.00232	.00302	-.00147	4.96243	4.96243	4.01050
4.000	35.938	-.00309	1.06711	.04411	-.09162	-.00137	.00258	-.00150	4.96243	4.96243	4.01050
GRADIENT		.00002	.03613	-.02331	-.03507	.00001	.00004	-.00006	-.12623	-.12623	.00000

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BM/TA4 (RPMD50) (16 JAN 74)

## REFERENCE DATA

SUPER = .7245 SF.FT.	XRP = 12.9510 INCHES
LINF = 7.8828 INCHES	YRP = .0000 INCHES
BREF = 15.1152 INCHES	ZRP = 6.0000 INCHES
SCALE = .0150	

RUN NO. 29/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.394	-.00046	.21624	.04518	-.01064	-.00412	.00473	-.00325	6.86628	7.81821	4.01050
4.000	16.500	-.00225	.33589	.04398	-.01775	-.00476	.00629	-.00167	6.86628	6.86628	4.96243
4.000	20.340	-.00305	.46795	.04476	-.02655	-.00505	.00641	-.00394	4.95243	5.91435	4.01050
4.000	25.676	-.00303	.65445	.04406	-.03904	-.00548	.00713	-.00746	4.96243	4.96243	4.01050
4.000	30.794	-.00308	.84699	.04164	-.05966	-.00358	.00352	-.00311	4.01050	4.96243	4.01050
4.000	35.869	-.00304	1.03762	.03795	-.08173	-.00232	.00322	-.00169	4.01050	4.96243	4.01050
GRADIENT		.00004	.03596	-.02327	-.03501	.00009	-.00010	-.00025	-.13625	-.13625	-.01730

PARAMETRIC DATA

BETA = .000	RNL = 1.000
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PARAMETRIC DATA

BETA = .000	RNL = 1.000
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MA-7, UPUT 1031, ROCKWELL PRR ORB. CONF. BM7M4

(RPM051) ( 16 JAN 74 )

## REFERENCE DATA

SHEP = .7245 SQ.FT. XHSP = 12.9510 INCHES  
 LNSP = 7.8626 INCHES YHSP = .0000 INCHES  
 BHSP = 15.1152 INCHES ZHSP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 33/ 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.469	-2.51273	.23333	.04571	-.01192	-.00227	.00587	.02354	9.77013	9.72296
4.000	16.559	-2.51271	.35037	.04460	-.01707	-.00219	.00761	.02130	9.72296	4.01050
4.000	20.657	-2.51281	.49229	.04380	-.02501	-.00305	.00985	.01871	8.77113	8.77013
4.000	23.696	-2.51281	.67050	.04323	-.04010	-.00234	.00987	.01897	6.86628	4.01050
4.000	30.793	-2.51280	.86329	.04151	-.05879	-.00266	.00718	.02214	4.96243	4.96243
4.000	35.875	-2.51182	1.07353	.03851	-.08273	-.00190	.00709	.02776	4.01050	4.01050
GRADIENT	.000003	.03602	-.00028	-.00303	.00019	.00022	-.00006	-.24631	-.24388	.00000

MA-7, UPUT 1031, ROCKWELL PRR ORB. CONF. BM7M4

(RPM052) ( 16 JAN 74 )

## REFERENCE DATA

SHEP = .7245 SQ.FT. XHSP = 12.9510 INCHES  
 LNSP = 7.8626 INCHES YHSP = .0000 INCHES  
 BHSP = 15.1152 INCHES ZHSP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 32/ 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.478	-2.03977	.123273	.04603	-.01165	-.00121	.00682	.04671	10.67399	10.67399
4.000	16.691	-2.04009	.35528	.04519	-.01603	-.00045	.00979	.04597	10.67399	4.01050
4.000	20.732	-2.03972	.49494	.04539	-.02780	-.00008	.01214	.04224	10.67399	4.01050
4.000	23.747	-2.03941	.66343	.04340	-.03865	.00163	.01247	.04132	7.81821	6.86628
4.000	30.768	-2.03910	.85616	.04269	-.05746	.00425	.01176	.04176	6.86628	4.01050
4.000	35.697	-2.03906	1.07212	.03939	-.08259	.00596	.01123	.04040	5.91435	4.01050
GRADIENT	.00007	.03583	-.00026	-.00296	.00032	.00011	-.00027	-.23423	-.27920	.00000

## PARAMETRIC DATA

BETA = -2.300  
 RN/L = 1.000

## PARAMETRIC DATA

BETA = -5.000  
 RN/L = 1.000

## PARAMETRIC DATA

BETA = -5.000  
 RN/L = 1.000

DATE 08 FEB 74

## TABULATED SOURCE DATA LARC UPUT 1031

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MA-7, UPUT 1031, ROCKWELL PRR CRB. CONF. BM/NA

(RPM033) ( 16 JAN 74 )

## REFERENCE DATA

SREF =	.7245 30.FT.	XRP =	12.9510 INCHES	BETA =	.000	PO-JET =	559.000
LREF =	7.8628 INCHES	YRP =	.0000 INCHES	RNL =	3.000		
SREF =	15.1152 INCHES	ZRP =	6.0000 INCHES				
SCALE =	.0150						

RUN NO. 23/ 0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CLM	CBL	CYN	PB1	PB2	PB3
4.000	12.655	-.00310	.24554	.05123	-.002323	-.00108	.00045	18.28940	20.19326
4.000	16.979	-.00257	.36574	.05024	-.02995	-.002295	.00172	-.00041	17.33748
4.000	21.079	-.00245	.49737	.04648	-.01637	-.00308	.002363	-.00236	19.24133
4.000	26.403	-.00219	.68772	.04835	-.01216	-.00391	.00470	.00453	9.72206
4.000	31.753	-.00266	.89167	.04693	-.07154	-.00285	.00357	-.00261	10.67399
4.000	37.047	-.00273	1.10949	.04456	-.09566	-.00237	.00335	-.00275	10.67399
GRADIENT	.000203	.03555	-.00295	-.00005	.00012	-.00017	-.35785	-.38225	.01421

MA-7, UPUT 1031, ROCKWELL PRR CRB. CONF. BM/NA

(RPM054) ( 16 JAN 74 )

## REFERENCE DATA

SREF =	.7245 30.FT.	XRP =	12.9510 INCHES	BETA =	.000	PO-JET =	600.000
LREF =	7.8628 INCHES	YRP =	.0000 INCHES	RNL =	1.000		
SREF =	15.1152 INCHES	ZRP =	6.0000 INCHES				
SCALE =	.0150						

RUN NO. 30/ 0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CLM	CBL	CYN	PB1	PB2	PB3
4.000	12.469	-.00022	.20026	.03300	.00426	-.00800	.0114	-.0143	4.01050
4.000	16.341	-.00226	.32315	.03395	-.00396	-.00827	.0117	-.0155	4.01050
4.000	20.607	-.00124	.46285	.03409	-.01188	-.00823	.01026	-.01066	4.01050
4.000	25.694	-.00209	.65475	.03445	-.02726	-.00650	.00739	-.00484	4.01050
4.000	30.917	-.00249	.83295	.03184	-.04711	-.01449	.00461	-.00200	4.01050
4.000	35.896	-.00179	1.02815	.02895	-.07024	-.00421	.00494	-.01150	4.01050
GRADIENT	-.000209	.03687	-.00019	-.00015	.00022	-.00033	.00088	-.14136	-.11631

DATE 06 FEB 74

TABULATED SOURCE DATA LANC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF. BMTN40

(RPPHD59) ( 16 JAN 74 )

## REFERENCE DATA

SHFT =	.7245 39.FFT.	XHBP =	12.9510 INCHES
LHFP =	7.8829 INCHES	YHBP =	.0000 INCHES
BHFP =	15.1132 INCHES	ZHBP =	6.0000 INCHES
SCALE =	.0193		

RUN NO. 41/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH ALPHA BETA CN CA CLM CBL CYN CY FB1 FB2 FB3

2.900	-1.95	.00122	-.01901	.08734	-.003860	-.000007	.000399	-.001015	105.38210	129.18028	53.97804
2.900	4.055	.00341	.10637	.08403	-.02567	-.000001	.00010	-.00154	101.57439	110.14174	56.83363
2.900	6.440	.00448	.23675	.06102	-.04220	.00028	.00024	-.00232	85.39164	93.00705	52.07419
2.900	12.665	.00459	.56271	.07749	-.05621	.00029	.00029	-.00267	58.73766	79.68007	45.41070
2.900	16.992	.00404	.57134	.07443	-.07163	.00029	.00035	-.00246	43.00695	65.44117	37.79529
2.900	21.468	.00352	.68425	.07089	-.08642	.00025	.00055	-.00316	31.13180	52.07119	36.84336
GRADIENT											
		.00052	.02950	-.00078	-.00397	.00001	-.00007	-.00012	-.89593	-4.47566	.67195

RUN NO. 43/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH ALPHA BETA CN CA CLM CBL CYN CY FB1 FB2 FB3

2.990	-2.24	.00021	-.02015	.07962	-.01202	.00026	.00026	-.00040	72.06466	83.48778	28.27602
2.990	4.006	.003175	.00720	.07705	-.02474	.00027	.00026	-.00104	72.06466	71.11273	29.22794
2.990	6.273	.00166	.20482	.07472	-.03556	.00028	.00041	-.00110	53.97804	57.78575	26.37216
2.990	12.509	.00193	.32320	.07160	-.04651	.00041	.00034	-.00160	35.89143	48.26648	23.51638
2.990	16.742	.00209	.45553	.06948	-.06043	.00039	.00021	-.00207	23.51638	38.74721	18.75675
2.990	21.032	.00144	.59804	.06652	-.07348	.00037	.00027	-.00105	18.75675	31.13183	19.77867
GRADIENT											
		.00056	.02544	-.00066	-.00301	.00000	.00000	-.00015	.00320	-2.93248	.22557

BETA = .000 RN/L = 3.000 PO-JET = .000

PARAMETRIC DATA

DATE 09 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF. BMTH40 (RPN056) ( 16 JAN 74 )

## REFERENCE DATA

**SURF = .7245 30.FT.** **XHPL = 12.9510 INCHES**  
**UCLP = 7.0000 INCHES** **YHPL = .0000 INCHES**  
**BLDP = 15.1152 INCHES** **ZHPL = 6.0000 INCHES**  
**SCALE = .0150**

RUN NO. 44/0 RNU/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CA	CLM	CLL	CYN	PB1	PB2	PB3
2.950	- .00076	-.02644	.07777	-.00298	.00005	.00014	.00029	.11273	.84.43971
4.150	.00056	.00030	.07147	-.02233	.00007	.00025	-.00039	.06466	.70.16060
2.950	.00055	.00030	.07273	-.03205	.00002	.00034	-.00073	.8890	.57.78575
2.950	.00196	.00196	.31680	.06933	.04319	.00017	.00034	.00162	.55.89143
2.950	.00215	.00215	.45464	.06892	.05677	.00017	.00028	.03162	.47.31456
2.950	.00266	.00266	.59126	.06412	.06875	-.00016	.00030	.00079	.20.46831
2.950	.00351	.00351	.02577	-.00758	-.03264	.00000	-.00015	.21377	.33.96756
GRADIENT									

MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF. BMTH40 (RPN057) ( 16 JAN 74 )

## REFERENCE DATA

**SURF = .7245 30.FT.** **XHPL = 12.9510 INCHES**  
**UCLP = 7.0000 INCHES** **YHPL = .0000 INCHES**  
**BLDP = 15.1152 INCHES** **ZHPL = 6.0000 INCHES**  
**SCALE = .0150**

RUN NO. 42/0 RNU/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CA	CLM	CLL	CYN	PB1	PB2	PB3
2.950	- .165	.00222	-.02151	.04937	-.00367	-.00017	.00026	.104.43016	.126.22035
2.950	4.070	.00350	.10657	.06192	-.02905	-.00022	.00011	.00159	.101.57339
2.950	8.357	.00454	.23290	.07940	-.03926	.00021	.00024	.00235	.68.24742
2.950	12.656	.02412	.36055	.07546	-.05315	-.00014	.00026	.00241	.59.68961
2.950	16.977	.00393	.50553	.07214	-.06839	-.00026	.00024	.00226	.43.50385
2.950	21.291	.00267	.64462	.1937	-.06116	-.00043	.00016	.00167	.55.41117
GRADIENT									

MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF. BMTH40 (RPN058) ( 16 JAN 74 )

## PARAMETRIC DATA

**BETA = .000** **RNU/L = 3.000**

MACH	ALPHA	BETA	CA	CLM	CLL	CYN	PB1	PB2	PB3
2.950	- .00076	-.02644	.07777	-.00298	.00005	.00014	.00029	.11273	.84.43971
4.150	.00056	.00030	.07147	-.02233	.00007	.00025	-.00039	.06466	.70.16060
2.950	.00055	.00030	.07273	-.03205	.00002	.00034	-.00073	.8890	.57.78575
2.950	.00196	.00196	.31680	.06933	.04319	.00017	.00034	.00162	.55.89143
2.950	.00215	.00215	.45464	.06892	.05677	.00017	.00028	.03162	.47.31456
2.950	.00266	.00266	.59126	.06412	.06875	-.00016	.00030	.00079	.20.46831
2.950	.00351	.00351	.02577	-.00758	-.03264	.00000	-.00015	.21377	.33.96756
GRADIENT									

HA-7, UPNT 1031, ROCKWELL PNR ORB. CONF. BATNAO

(RPN058) ( 16 JAN 74 )

## REFERENCE DATA

SUPER =	.7249 50. FT.	100F =	12.9510 INCHES
UNEF =	7.8628 INCHES	YRFP =	.0000 INCHES
BUREP =	19.1132 INCHES	ZRFP =	6.0000 INCHES
SCALE =	.0150		

RUN NO. 45/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLH	CLL	CIN	CT	PB1	PB2	PB3
4.0000	12.403	-.00085	.23684	.06145	-.03073	.02046	.00053	.00033	5.42977	7.33362	3.52391
4.0000	16.515	-.00022	.36014	.08246	-.03712	.02052	.00069	-.00095	5.42977	6.38170	2.57399
4.0000	20.536	-.00032	.49695	.08254	-.04727	.02073	.00057	.00038	4.47784	6.38170	2.57399
4.0000	25.713	-.00037	.67600	.05695	-.06072	.00049	.00076	-.00057	4.47784	6.38170	2.57399
4.0000	30.768	-.00014	.87645	.05796	-.08260	.00100	.00066	-.00118	4.47784	6.38170	2.57399
4.0000	35.920	-.00010	1.26859	.05451	-.10472	.00194	.00098	-.00248	5.42977	3.52391	
GRADIENT		.00002	.32620	-.00027	-.03317	.00002	.00001	-.00009	-.07430	-.05702	.01253

HA-7, UPNT 1031, ROCKWELL PNR ORB. CONF. BATNAO

(RPN059) ( 16 JAN 74 )

## REFERENCE DATA

SUPER =	.7245 50. FT.	100F =	12.9510 INCHES
UNEF =	7.8628 INCHES	YRFP =	.0000 INCHES
BUREP =	19.1132 INCHES	ZRFP =	6.0000 INCHES
SCALE =	.0150		

RUN NO. 45/0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLH	CLL	CIN	CT	PB1	PB2	PB3
4.0000	12.672	-.00043	.23423	.06040	-.03358	.02041	.00034	-.00029	17.80402	18.75675	7.33362
4.0000	16.913	-.00008	.37392	.05961	-.04160	.00043	.00034	-.00080	14.94904	15.90096	7.33362
4.0000	21.073	.00007	.93362	.04930	.00051	.00051	.00050	-.00064	13.04516	13.99111	7.33362
4.0000	26.521	.00084	.69465	.05827	-.06366	.00053	.00054	-.00130	9.23746	13.99111	7.33362
4.0000	31.713	.00063	.89538	.05642	-.08401	.00100	.00030	-.00124	9.23746	13.99111	7.33362
4.0000	37.108	.00233	1.11540	.05390	-.10647	.00091	.00064	-.00330	11.14133	11.14133	7.33362
GRADIENT		.00010	.53536	-.00026	-.00323	.00002	.00001	-.00010	-.30743	-.25021	.01000

MA-7,INPUT 1031,ROCKWELL PER OBD. CONF. BATTMAN

(RPHM031) ( 16 JAN 74 )

## REFERENCE DATA

SURF #	.7245 50.5FT.	100SF	=	12.9510 INCHES						
UNEF #	7.0000 THICK	100SF	=	.0000 INCHES						
BREF #	15.1152 THICK	100SF	=	6.0000 INCHES						
SCALE #	.0150									

ELEM NO. 49/ 0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CTN	CTL	PB1	PB2	PB3
4.0000	12.305	.000000	.25000	.03000	-.02700	.000004	.07000	-.020115	5.42977	7.33362	2.57399
4.0000	16.472	-.000076	.35000	.03500	-.03500	.000006	.00005	.00004	5.42977	7.33362	3.52591
4.0000	20.536	-.000116	.49010	.05000	-.04023	.000019	.000036	.00003	4.47784	7.33362	2.57399
4.0000	23.700	-.000261	.67530	.05000	-.05000	.000025	.000057	-.00015	4.47784	6.36170	3.52591
4.0000	30.790	-.000001	.86575	.05000	-.05000	.000016	.000044	-.00117	4.47784	5.42977	2.57399
4.0000	36.043	.000051	1.00000	.05000	-.05000	.000013	.00113	-.00002	2.57399	5.42977	3.52591
GRADIENT	.000000	.000000	.000000	.000000	-.000000	.000002	.000002	-.000012	-.000002	.000002	.01747

MA-7,INPUT 1031,ROCKWELL PER OBD. CONF. BATTMAN

(RPHM031) ( 16 JAN 74 )

## REFERENCE DATA

SURF #	.7245 50.5FT.	100SF	=	12.9510 INCHES						
UNEF #	7.0000 THICK	100SF	=	.0000 INCHES						
BREF #	15.1152 THICK	100SF	=	6.0000 INCHES						
SCALE #	.0150									

ELEM NO. 53/ 0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CTN	CTL	PB1	PB2	PB3
4.0000	12.469	-.00100	.25000	.05000	-.02000	-.000001	.000049	.00200	5.42977	7.33362	2.57399
4.0000	16.475	-.00193	.37225	.05000	-.03162	-.000027	.000035	.00161	5.42977	7.33362	2.57399
4.0000	20.509	-.00169	.50000	.05000	-.04175	-.000039	.00116	.00263	4.47784	5.42977	2.57399
4.0000	23.634	-.000208	.68207	.05000	-.05000	-.000077	.00158	.00249	4.47784	5.42977	3.52591
4.0000	26.764	-.00171	.86270	.05000	-.05000	-.000026	.00125	.00135	2.57399	5.42977	2.57399
4.0000	32.914	-.00167	1.00000	.05000	-.05000	-.000015	.000014	.00206	2.57399	4.47784	2.57399
GRADIENT	.000000	.000000	.000000	.000000	-.000000	.000000	.000000	-.000001	-.000001	.000000	.01489

(RPHM031) ( 16 JAN 74 )

## PARAMETRIC DATA

DATE OF PGS 74

TABULATED SOURCE DATA LARC UPT 1031

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NA-7, UPT 1031, ROCKWELL PNR ORB. CONF. BATTMAD

(RPPD062) ( 16 JAN 74 )

## REFERENCE DATA

**SUPER =** .7243 S.L.F.T.  
**LNGP =** 7.8463 INCHES  
**GRDP =** 15.1132 INCHES  
**SCALE =** .0130

RUN NO. 48/0 RNL = 3.00 GRADIENT INTERVAL = -.5.00/ 5.00

	ALPHA	BETA	CH	CA	CLM	CM	CYN	CT	PB1	PB2	PB3
4.0000	12.571	-.000240	.23048	.05837	-.03924	.03017	.00035	-.000312	16.85289	16.75675	7.33362
4.0000	16.848	-.000246	.36771	.05742	-.03784	.03022	.00032	-.000319	14.94904	15.90276	8.28559
4.0000	21.082	-.000237	.49934	.05691	-.04598	.03001	.00039	-.000235	12.09326	13.99711	8.28555
4.0000	26.412	.000232	.68539	.05627	-.06207	.03015	.00044	-.000365	12.09326	13.99711	7.33362
4.0000	31.717	.000232	.86774	.05436	-.08080	.03044	.00045	-.00129	11.14133	11.14133	8.28555
4.0000	37.043	.00149	1.15703	.05177	-.10570	.03033	.00101	-.00287	10.18940	11.14133	8.28555
4.0000	GRADIENT	.000237	.03325	-.00325	-.003305	.03001	.00022	-.002310	-.25523	-.32359	.02142

NA-7, UPT 1031, ROCKWELL PNR ORB. CONF. BATTMAD

(RPPD063) ( 16 JAN 74 )

## REFERENCE DATA

**SUPER =** .7243 S.L.F.T.  
**LNGP =** 7.8463 INCHES  
**GRDP =** 15.1132 INCHES  
**SCALE =** .0130

RUN NO. 50/0 RNL = 1.00 GRADIENT INTERVAL = -.5.00/ 5.00

	ALPHA	BETA	CH	CA	CLM	CM	CYN	CT	PB1	PB2	PB3
4.0000	12.571	-.00112	.22767	.05832	-.01671	-.01099	.00041	.00148	5.42977	7.33362	2.53399
4.0000	16.873	-.000266	.34301	.05151	-.02594	-.00119	.00059	.00025	5.42977	7.33362	3.52591
4.0000	20.342	-.000275	.47453	.05152	-.03505	-.00142	.00145	-.00019	4.47784	5.42977	3.52591
4.0000	23.753	-.000260	.65954	.05143	-.04721	-.00168	.00167	-.00063	4.47784	5.42977	2.53399
4.0000	26.752	-.000274	.85461	.04974	-.06856	-.00095	.00197	-.000201	2.57399	5.42977	2.53399
4.0000	33.753	-.00291	1.05540	.04630	-.09214	-.00267	.00127	-.00113	2.57399	5.42977	2.53399
4.0000	GRADIENT	.00001	.03378	-.00023	-.00026	.00001	.00013	-.00008	-.15965	-.08985	-.02484

PARAMETRIC DATA

(RPPD063) ( 16 JAN 74 )

## REFERENCE DATA

**SUPER =** .7243 S.L.F.T.  
**LNGP =** 7.8463 INCHES  
**GRDP =** 15.1132 INCHES  
**SCALE =** .0130

RUN NO. 50/0 RNL = 1.00 GRADIENT INTERVAL = -.5.00/ 5.00

	ALPHA	BETA	CH	CA	CLM	CM	CYN	CT	PB1	PB2	PB3
4.0000	12.571	-.00112	.22767	.05832	-.01671	-.01099	.00041	.00148	5.42977	7.33362	2.53399
4.0000	16.873	-.000266	.34301	.05151	-.02594	-.00119	.00059	.00025	5.42977	7.33362	3.52591
4.0000	20.342	-.000275	.47453	.05152	-.03505	-.00142	.00145	-.00019	4.47784	5.42977	3.52591
4.0000	23.753	-.000260	.65954	.05143	-.04721	-.00168	.00167	-.00063	4.47784	5.42977	2.53399
4.0000	26.752	-.000274	.85461	.04974	-.06856	-.00095	.00197	-.000201	2.57399	5.42977	2.53399
4.0000	33.753	-.00291	1.05540	.04630	-.09214	-.00267	.00127	-.00113	2.57399	5.42977	2.53399
4.0000	GRADIENT	.00001	.03378	-.00023	-.00026	.00001	.00013	-.00008	-.15965	-.08985	-.02484

PARAMETRIC DATA

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7,UPNT 1031,ROCKWELL PRR ORB. CONF. BMTH4D

(RPM064) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 SF.FT.	XMRP = 12.9510 INCHES
LREF = 7.8628 INCHES	YMRP = .0000 INCHES
BREF = 15.1152 INCHES	ZMRP = 6.0000 INCHES
SCALE = .0150	

RUN NO.	51/ D	RNVL = 1.00	GRADIENT INTERVAL = -5.00/ 5.00							
MACH	ALPHA	BETA	CN	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.384	-.002177	.21631	.04755	-.01067	-.002199	.00049	.00277	5.42977	6.28555
4.000	16.512	-.000361	.33772	.04705	-.01099	-.00196	.00157	-.00126	5.42977	7.33362
4.000	20.659	-.000995	.47442	.04562	-.02910	-.00213	.00168	-.00031	4.47784	6.38173
4.000	25.667	-.001112	.69407	.04560	-.04267	-.00230	.00120	-.00051	5.42977	5.42977
4.000	30.775	-.001212	.84844	.04341	-.06148	-.00174	.00091	.00269	2.57399	4.47784
4.000	35.947	-.00154	1.06056	.04158	-.08556	-.00142	.00136	.00104	2.57399	4.47784
GRADIENT	-0.00002	.03592	-.00205	-.00313	.00032	.0-.301	-.02901	-.14355	-.17086	.02978

MA-7,UPNT 1031,ROCKWELL PRR ORB. CONF. BMTH4D

(RPM065) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7245 SF.FT.	XMRP = 12.9510 INCHES
LREF = 7.8628 INCHES	YMRP = .0000 INCHES
BREF = 15.1152 INCHES	ZMRP = 6.0000 INCHES
SCALE = .0150	

RUN NO.	47/ D	RNVL = 3.00	GRADIENT INTERVAL = -5.00/ 5.00							
MACH	ALPHA	BETA	CN	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.649	-.00136	.24121	.05171	-.02248	-.00081	.00027	.00047	16.85289	16.75675
4.000	16.900	-.00263	.35851	.05081	-.02149	-.00131	.00053	.00128	11.90096	16.75675
4.000	21.046	-.00169	.48703	.04951	-.03627	-.00169	.00134	-.00052	13.99711	8.28555
4.000	26.409	-.00172	.67451	.04935	-.05078	-.00227	.00181	-.00118	10.18940	14.94904
4.000	31.714	-.00242	.87675	.04766	-.07128	-.00142	.00119	-.00013	8.28555	9.23748
4.000	37.078	-.00248	1.09869	.04540	-.09118	-.00118	.00111	-.00026	9.23748	11.14133
GRADIENT	-.00003	.03520	-.010324	-.00299	-.00001	.00004	-.00005	-.37416	-.39295	.01409

REFERENCE DATA

SREF = .7245 SF.FT.	XMRP = 12.9510 INCHES
LREF = 7.8628 INCHES	YMRP = .0000 INCHES
BREF = 15.1152 INCHES	ZMRP = 6.0000 INCHES
SCALE = .0150	

RUN NO.	51/ D	RNVL = 1.00	GRADIENT INTERVAL = -5.00/ 5.00							
MACH	ALPHA	BETA	CN	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.384	-.002177	.21631	.04755	-.01067	-.002199	.00049	.00277	5.42977	6.28555
4.000	16.512	-.000361	.33772	.04705	-.01099	-.00196	.00157	-.00126	5.42977	7.33362
4.000	20.659	-.000995	.47442	.04562	-.02910	-.00213	.00168	-.00031	4.47784	6.38173
4.000	25.667	-.001112	.69407	.04560	-.04267	-.00230	.00120	-.00051	5.42977	5.42977
4.000	30.775	-.001212	.84844	.04341	-.06148	-.00174	.00091	.00269	2.57399	4.47784
4.000	35.947	-.00154	1.06056	.04158	-.08556	-.00142	.00136	.00104	2.57399	4.47784
GRADIENT	-0.00002	.03592	-.00205	-.00313	.00032	.0-.301	-.02901	-.14355	-.17086	.02978

REFERENCE DATA

SREF = .7245 SF.FT.	XMRP = 12.9510 INCHES
LREF = 7.8628 INCHES	YMRP = .0000 INCHES
BREF = 15.1152 INCHES	ZMRP = 6.0000 INCHES
SCALE = .0150	

RUN NO.	47/ D	RNVL = 3.00	GRADIENT INTERVAL = -5.00/ 5.00							
MACH	ALPHA	BETA	CN	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.649	-.00136	.24121	.05171	-.02248	-.00081	.00027	.00047	16.85289	16.75675
4.000	16.900	-.00263	.35851	.05081	-.02149	-.00131	.00053	.00128	11.90096	16.75675
4.000	21.046	-.00169	.48703	.04951	-.03627	-.00169	.00134	-.00052	13.99711	8.28555
4.000	26.409	-.00172	.67451	.04935	-.05078	-.00227	.00181	-.00118	10.18940	14.94904
4.000	31.714	-.00242	.87675	.04766	-.07128	-.00142	.00119	-.00013	8.28555	9.23748
4.000	37.078	-.00248	1.09869	.04540	-.09118	-.00118	.00111	-.00026	9.23748	11.14133
GRADIENT	-.00003	.03520	-.010324	-.00299	-.00001	.00004	-.00005	-.37416	-.39295	.01409

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TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.

BWTR40

(RPN036) ( 16 JAN 74 )

REFERENCE DATA

SREF = .7243 SG, PT. XMRP = 12.9510 INCHES  
LREF = 7.9828 INCHES YMRP = .0000 INCHES  
BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 52/0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLH	CBL	CYN	CY	FB1	PB2	PB3
4.000	12.493	-.00250	.29535	.03734	.00329	-.00341	.00178	.00258	5.42977	7.33362	2.57599
4.000	16.513	-.02248	.32672	.03582	-.00498	-.00336	.00237	.00135	5.42977	6.38170	2.57599
4.000	20.524	-.02255	.45783	.03240	-.01498	-.00387	.00246	.00226	3.52251	5.42977	2.57599
4.000	25.682	-.05314	.64895	.03598	-.02981	-.00414	.00254	.00345	2.57599	5.42977	2.57599
4.000	30.768	-.03515	.84311	.03455	-.04866	-.00296	.00163	.00391	2.57599	4.47784	2.57599
4.000	35.909	-.00250	1.06125	.03182	-.07193	-.00312	.00210	.00112	2.57599	4.47784	2.57599
4.000	GRADIENT	-.00002	.03650	-.00019	-.00318	-.00001	-.00001	-.00001	-.14114	-.11889	-.00000

PARAMETRIC DATA

BETA = .000  
RN/L = 1.000

PO-JET = 600.000



MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTH41

(RPHD68) (16 JAN 74)

## REFERENCE DATA

SREF = .7245 SQ.FT. XMRP = 12.9510 INCHES  
 LREF = 7.8828 INCHES YMRP = .00000 INCHES  
 BREF = 15.1152 INCHES ZMRP = 6.00000 INCHES  
 SCALE = .0150

RUN NO. 66/0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CN	CA	CLW	CBL	CYN	CY	PB1	PB2	PB3
2.950	-.208	-.00036	-.02136	.07925	-.01261	.037025	.00023	-.00011	70.23571	84.51861	27.41299
2.950	4.052	.00050	.08987	.07692	-.02532	.00026	.00028	-.00053	70.23571	71.19164	27.41299
2.950	6.219	.02127	.20461	.07461	-.03552	.00033	.00038	-.00105	51.20117	58.81658	22.64336
2.950	12.471	.00303	.32349	.07142	-.04652	.00054	.00035	-.00176	35.01841	48.34539	21.69143
2.950	18.752	.03215	.45630	.06884	-.06591	.00059	.00032	-.00141	24.54321	30.77804	17.89372
2.950	21.075	.00342	.59969	.06598	-.07372	.00050	.00030	-.00230	17.88372	31.21070	19.78758
GRADIENT	.00020	.02611	-.00054	-.00298	.00000	.00001	-.00012	-.00000	-3.12840	-.00000	

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTH41 (RPHD68) (16 JAN 74)

## REFERENCE DATA

SREF = .7245 SQ.FT. XMRP = 12.9510 INCHES  
 LREF = 7.8828 INCHES YMRP = .00000 INCHES  
 BREF = 15.1152 INCHES ZMRP = 6.00000 INCHES  
 SCALE = .0150

RUN NO. 64/0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CN	CA	CLW	CBL	CYN	CY	PB1	PB2	PB3
2.900	-.163	.00100	-.01480	.08636	-.00944	-.00008	.00028	-.00084	102.60523	129.25918	52.15310
2.900	4.097	.00272	.11394	.08392	-.02672	.00020	.00014	-.00140	95.94174	111.17257	53.10502
2.900	6.356	.00392	.23915	.08121	-.04266	.00032	.00020	-.00201	81.66283	94.96981	46.44153
2.900	12.656	.00447	.36812	.07733	-.05720	.00044	.00028	-.00219	56.91273	81.66283	41.68195
2.900	17.082	.00324	.51132	.07400	-.07260	.00048	.00038	-.00177	42.63383	66.43200	36.92226
2.900	21.380	.00325	.65798	.07070	-.08667	.00044	.00034	-.00210	30.25877	53.10502	36.92226
GRADIENT	.00049	.03098	-.01157	-.00424	.00007	-.00033	-.00015	-.00009	-4.22584	.22241	

PARAMETRIC DATA

BETA = .000 RN/L = 3.000

PO-JET = 151.000

RUN NO. 64/0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CN	CA	CLW	CBL	CYN	CY	PB1	PB2	PB3
2.900	-.163	.00100	-.01480	.08636	-.00944	-.00008	.00028	-.00084	102.60523	129.25918	52.15310
2.900	4.097	.00272	.11394	.08392	-.02672	.00020	.00014	-.00140	95.94174	111.17257	53.10502
2.900	6.356	.00392	.23915	.08121	-.04266	.00032	.00020	-.00201	81.66283	94.96981	46.44153
2.900	12.656	.00447	.36812	.07733	-.05720	.00044	.00028	-.00219	56.91273	81.66283	41.68195
2.900	17.082	.00324	.51132	.07400	-.07260	.00048	.00038	-.00177	42.63383	66.43200	36.92226
2.900	21.380	.00325	.65798	.07070	-.08667	.00044	.00034	-.00210	30.25877	53.10502	36.92226
GRADIENT	.00049	.03098	-.01157	-.00424	.00007	-.00033	-.00015	-.00009	-4.22584	.22241	

PARAMETRIC DATA

BETA = .000 RN/L = 3.000

PO-JET = 165.000

DATE 08 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7,UPNT 1031,ROCKWELL PRR ORB. CONF. BMTH41

(RPMH70) ( 16 JAN 74 )

## REFERENCE DATA

SREF = .7243 SQ.FT. XHMP = 12.9510 INCHES  
 LREF = 7.8828 INCHES YHMP = .0000 INCHES  
 BREF = 15.1152 INCHES ZHMP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 577 D RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.432	-.00173	.29346	.06319	-.02924	.00011	.00008	.00460	8.36445	8.36445	2.65289
4.0000	16.511	-.00132	.37358	.06236	-.03783	.00038	.00021	.00388	7.41253	7.41253	2.65289
4.0000	20.595	-.00143	.51266	.06260	-.04848	.00063	.00022	.00389	6.46060	7.41253	2.65289
4.0000	25.682	-.00152	.68731	.05986	-.06969	.00064	.00044	.00383	5.50867	7.41253	2.65289
4.0000	30.708	-.00129	.86734	.05796	-.08185	.00112	.00022	.00337	5.50867	6.48060	2.65289
4.0000	35.922	-.00066	1.09723	.05422	-.10316	.00095	.00058	.00350	4.55675	5.50867	2.65289
4.0000	GRADIENT	.00003	.03612	-.00337	-.00313	.02224	.00024	-.00012	-.10442	.01200	

MA-7,UPNT 1031,ROCKWELL PRR ORB. CONF. BMTH41

(RPMH71) ( 16 JAN 74 )

## REFERENCE DATA

SREF = .7243 SQ.FT. XHMP = 12.9510 INCHES  
 LREF = 7.8828 INCHES YHMP = .0000 INCHES  
 BREF = 15.1152 INCHES ZHMP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 544 D RN/L = -.5.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.689	-.00197	.25837	.06069	-.03308	.00045	.00040	.00130	17.88372	19.78756	7.41253
4.0000	16.916	-.00153	.38009	.05963	-.04087	.00063	.00051	.00201	15.97987	15.97987	7.41253
4.0000	21.094	-.00190	.51144	.05904	-.04882	.00062	.00048	.00197	14.07612	15.07234	7.41253
4.0000	26.440	-.00131	.70111	.05847	-.06558	.00072	.00059	.00235	10.28911	14.07612	7.41253
4.0000	31.727	-.00270	.90513	.05645	-.08359	.00120	.00036	.00227	11.22024	14.07612	7.41253
4.0000	37.042	-.00321	1.12498	.05335	-.10842	.00116	.00081	.00292	12.17216	11.22024	7.41253
4.0000	GRADIENT	.00003	.03566	-.00026	-.00006	.00019	.00001	-.00038	-.25519	-.28436	.01001

MA-7,INPUT 1031,ROCKWELL PRR ORB. CONF. BMTN41

(RPM072) ( 16 JAN 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XREF = 12.9510 INCHES  
 LREF = 7.8826 INCHES YREF = .0000 INCHES  
 BREF = 15.1152 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0155

RUN NO. 58 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.399	-.00177	.24455	.36171	-.02994	.00035	.00007	.00495	7.41253	7.41253	1.70096
4.000	16.499	-.00134	.36761	.06130	-.03666	.00362	.00020	.00393	7.41253	7.41253	2.65289
4.000	20.582	-.00145	.59719	.06157	-.04735	.00062	.00021	.00364	4.55675	7.41253	2.65289
4.000	25.750	-.00150	.69332	.06000	-.08183	.00064	.00045	.00318	5.50867	7.41253	2.65289
4.000	30.832	-.00167	.69232	.05771	-.08103	.00092	.00037	.00167	5.50867	6.46060	2.65289
4.000	35.887	-.00191	1.09738	.05583	-.10508	.00069	.00101	.00147	4.55675	6.46060	1.70096
	GRADIENT	.00024	.03547	-.00032	-.00318	.00002	.00003	-.00015	-.11144	-.04704	-.01237

MA-7,INPUT 1031,ROCKWELL PRR ORB. CONF. BMTN41

(RPM073) ( 16 JAN 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XREF = 12.9510 INCHES  
 LREF = 7.8826 INCHES YREF = .0000 INCHES  
 BREF = 15.1152 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0155

RUN NO. 59 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.409	-.00177	.24452	.06163	-.02993	.00035	.00007	.00491	7.41253	7.41253	1.70096
4.000	16.499	-.00134	.36748	.06127	-.03665	.00038	.00020	.00393	6.46060	7.41253	1.70096
4.000	20.582	-.00157	.50562	.06294	-.04729	.00039	.00043	.00360	5.50867	7.41253	1.70096
4.000	25.673	-.00143	.68746	.05975	-.08073	.00055	.00193	-.00108	5.50867	7.41253	2.65289
4.000	30.761	-.00161	.89673	.05752	-.08186	.00025	.00336	.00201	5.50867	6.46060	1.70096
4.000	35.911	-.00202	1.09750	.05424	-.10324	.00050	.00214	-.00139	5.50867	6.46060	1.70096
	GRADIENT	.00037	.03639	-.00330	-.00314	-.00001	.00009	-.00029	-.02190	-.14711	.01394

PARAMETRIC DATA

BETA = .0000 RN/L = 1.0000

PARAMETRIC DATA

BETA = .0000 RN/L = 1.0000

(RPM072) ( 16 JAN 74 )

PARAMETRIC DATA

BETA = .0000 RN/L = 1.0000

PARAMETRIC DATA

BETA = .0000 RN/L = 1.0000

(RPM073) ( 16 JAN 74 )

MA-7, INPUT 1031, ROCKWELL PFR ORB. CONF. BMTH41

(RPM074) (16 JAN 74)

## REFERENCE DATA

SREF = .7245 50. FT. XNP = 12.9510 INCHES  
 LREF = 7.8628 INCHES YNP = .0000 INCHES  
 SREF = 15.1152 INCHES ZNP = 6.0000 INCHES  
 SCALE = .0193

RUN NO. 55/0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PBI	PB2	PB3
4.000	12.682	-.00162	.26034	.06073	-.03345	.00045	.00033	.00129	17.98372	19.78758	7.41253
4.000	17.896	-.00192	.36014	.05951	-.04067	.00053	.00040	.00126	16.93180	16.93180	7.41253
4.000	21.077	-.00131	.51341	.05690	-.04916	.00064	.00053	.00119	14.07602	15.02794	7.41253
4.000	26.394	-.00131	.69923	.05639	-.04322	.00056	.00059	.00135	10.26831	15.02794	6.46760
4.000	31.702	-.00207	.90316	.05631	-.03358	.00120	.00036	.0027	11.22024	13.12409	7.41253
4.000	37.039	-.00097	1.12297	.05334	-.10806	.00195	.00112	.00188	12.17216	11.22024	7.41253
GRADIENT		.00010	.03553	-.00268	-.01933	.00033	.00022	-.00011	-.28160	-.31295	-.05473

MA-7, INPUT 1031, ROCKWELL PFR ORB. CONF. BMTH41

(RPM075) (16 JAN 74)

## REFERENCE DATA

SREF = .7245 50. FT. XNP = 12.9510 INCHES  
 LREF = 7.8628 INCHES YNP = .0000 INCHES  
 SREF = 15.1152 INCHES ZNP = 6.0000 INCHES  
 SCALE = .0193

RUN NO. 60/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PBI	PB2	PB3
4.000	12.409	-.00114	.24451	.06101	-.02991	-.00004	.00120	.00204	7.41253	7.41253	1.70096
4.000	16.499	-.00107	.36773	.06038	-.03665	-.00048	.00198	.00089	6.46060	7.41253	1.70096
4.000	20.562	-.00096	.50718	.06045	-.04735	-.00067	.00277	-.00077	4.55675	7.41253	1.70096
4.000	25.604	-.00069	.68767	.05958	-.06083	-.00132	.00358	-.00272	5.50867	7.41253	1.70096
4.000	30.772	-.00066	.86660	.05758	-.08189	-.00241	.00257	-.00229	5.50867	6.46160	1.70096
4.000	35.887	-.00036	1.09728	.05375	-.10511	-.00913	.00321	-.00287	5.50867	5.50867	1.70096
GRADIENT		.00005	.03639	-.00268	-.00323	-.00002	.00016	-.00020	-.06445	-.07690	.00210

DATE OF PRT 74

## TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTH4:

(RPHD76) (16 JAN 74)

## REFERENCE DATA

SHEF = .7245 SF.FT.  
 LREF = 7.8626 INCHES  
 BREF = 15.1152 INCHES  
 SCALE = .0190

RUN NO. 61 / 0 RN/L = 1.0E- GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLB	CY	PB1	PB2	PB3
4.000	12.416	-.00066	.24475	.06026	-.02586	-.00133	.00376	-.00236	7.41233	6.49060
4.000	16.519	-.00029	.36763	.05978	.03673	-.00197	.00510	-.00486	7.41253	2.65289
4.000	20.562	-.00049	.50752	.06034	-.04746	-.00220	.00534	-.00523	5.50867	7.41253
4.000	25.652	-.00034	.66758	.05970	-.06286	-.00214	.00549	-.00705	4.55675	7.41253
4.000	30.760	-.00032	.86113	.05748	-.07896	-.00104	.00371	-.00416	4.55675	6.46060
4.000	35.934	-.00022	1.09700	.05346	-.10318	-.00013	.00313	-.00284	4.55675	5.50867
4.000	GRADIENT	.00002	.03626	-.00026	-.00398	.00006	-.00005	-.00000	-.14112	-.05292

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTH4:

(RPHD77) (16 JAN 74)

## REFERENCE DATA

SHEF = .7245 SF.FT.  
 LREF = 7.8626 INCHES  
 BREF = 15.1152 INCHES  
 SCALE = .0190

RUN NO. 56 / 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLB	CY	PB1	PB2	PB3
4.000	12.660	-.00192	.25798	.05966	-.03299	.00038	.00051	.00081	17.88372	19.70758
4.000	16.693	-.00241	.37825	.05668	-.04113	-.00002	.00175	-.00161	16.93183	15.97967
4.000	21.083	.00102	.51169	.05602	-.04949	-.00065	.00232	-.00437	14.07602	6.46060
4.000	26.394	.00173	.69929	.05791	-.06333	-.00099	.00370	-.00596	11.22024	15.08794
4.000	31.713	.00224	.90207	.05591	-.08018	-.00032	.00297	-.00459	12.37216	13.12409
4.000	37.052	.00304	1.12142	.05336	-.10735	-.00212	.00232	-.00575	12.17216	11.22024
4.000	GRADIENT	.00016	.03552	-.00024	-.00301	-.00002	.00009	-.00024	-.25996	.00000

## PARAMETRIC DATA

RN/L	BETA	PB1	PB2	PB3
1.000	-.00236	7.41233	6.49060	2.65289
3.000	-.00486	7.41253	7.41253	2.65289
5.000	-.00523	5.50867	7.41253	2.65289
7.000	-.00705	4.55675	7.41253	1.70396
9.000	-.01416	4.55675	6.46060	1.70396
11.000	-.00284	4.55675	5.50867	1.70396
13.000	-.00000	-.14112	-.05292	-.05292

## PARAMETRIC DATA

RN/L	BETA	PB1	PB2	PB3
1.000	-.00437	14.07602	6.46060	6.46060
3.000	-.00596	11.22024	15.08794	6.46060
5.000	-.00459	12.37216	13.12409	6.46060
7.000	-.00575	12.17216	11.22024	6.46060
9.000	-.0024	-.25996	.00000	.00000

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF. BTM41

(RPT070) (16 JAN 74)

## REFERENCE DATA

SHPF =	.7245 30. FT.	30RP =	12.9510 INCHES
LNSP =	7.6626 INCHES	TRSP =	.0000 INCHES
DRSF =	15.1152 INCHES	ZRSP =	6.0000 INCHES
SCALE =	.0195		

RUN NO. 62 / 0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CA	CLN	CBL	CYN	CV	PB1	PB2
4.000	12.527	.00135	.25120	.05926	-.02930	.00431	.01414	6.46060	7.11253
4.000	15.528	.00105	.36237	.03955	-.03582	-.00456	-.01368	6.46363	7.11253
4.000	20.561	.00115	.50215	.06072	-.04462	-.00398	-.01252	5.50367	6.46363
4.000	23.674	.00097	.68614	.05935	-.05937	-.00324	-.00707	4.55675	6.46363
4.000	30.870	.00051	.89236	.05723	-.07524	-.00143	.00356	-.00710	5.50367
4.000	35.922	.00022	1.09693	.05297	-.10334	-.00313	.00313	-.00284	4.55675
GRADIENT	-0.00036	.03647	-0.02225	-0.02314	.00219	-0.0028	.00048	-.07926	-.09194

MA-7, UPNT 1031, ROCKWELL PRR CRB. CONF. BTM41

(AFMD01) (06 FEB 74)

## REFERENCE DATA

SHPF =	.7245 30. FT.	30RP =	12.9510 INCHES
LNSP =	7.6626 INCHES	TRSP =	.0000 INCHES
DRSF =	15.1152 INCHES	ZRSP =	6.0000 INCHES
SCALE =	.0195		

RUN NO. 81 / 0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALFA4A	BETA	CA	CLN	CBL	CYN	CV	PB1	PB2
4.000	12.526	-.00071	.76176	.03634	.02160	-.00265	.00051	.02087	12.05675
4.000	16.337	-.00108	.1023	.03759	.03707	-.00027	.00039	.00168	13.00867
4.000	20.403	-.00102	.15626	.03670	.05456	-.00026	.00061	.00151	13.00867
4.000	25.514	-.00140	.22071	.03579	.07518	-.00031	.00073	.00214	10.15289
4.000	30.562	-.00036	.31130	.03600	.09680	-.00031	.00059	.00095	8.24934
4.000	35.599	-.00121	.38824	.03515	.11579	-.00031	.00053	.01122	7.29711
GRADIENT	-.00031	.01409	-.00015	.00408	.00001	-.00001	-.00001	-.25463	.38300

(AFMD01) (06 FEB 74)

PARAMETRIC DATA

BETA	= .000	RNL	= 1.000	PO-JET	= 600.000
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(AFMD01) (06 FEB 74)

PARAMETRIC DATA

BETA	= .000	RNL	= 1.000	PO-JET	= 37.000
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(AFMD01) (06 FEB 74)

PARAMETRIC DATA

(APM002) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 50.FFT. XREF = 12.9310 INCHES  
 LREF = 7.8628 INCHES YREF = .0000 INCHES  
 SREF = 1.192 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 79/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CTN	CTL	PB1	PB2	PB3
4.000	12.785	-.000357	.06194	.03674	.52354	-.00025	.00030	.00036	.22.52794	6.34518	4.44133
4.000	13.464	-.0.1112	.10025	.03742	.03561	-.00028	.00038	.00197	18.72024	5.39326	4.44133
4.000	20.435	-.00100	.16219	.03655	.05349	-.00026	.00031	.00147	15.86445	5.39326	4.44133
4.000	25.494	-.00154	.22074	.03591	.07704	-.00050	.00034	.00256	12.05675	7.29711	4.44133
4.000	30.505	-.00096	.31150	.03637	.09666	.00025	.00036	.00101	9.25096	10.15269	4.44133
4.000	35.414	-.00119	.39429	.03627	.11656	.00031	.00035	.00117	5.39326	16.81638	3.48940
GRADIENT		-.00002	.01424	-.00009	.00404	.00002	.00001	-.00001	-.70566	.42398	-.02947

MA-7,UPNT 1031,ROCKWELL PRR CRB. CONF. BTM1

## PARAMETRIC DATA

SREF = .7245 50.FFT. XREF = 12.9310 INCHES  
 LREF = 7.8628 INCHES YREF = .0000 INCHES  
 SREF = 12.1152 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 80/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLL	CTN	CTL	PB1	PB2	PB3
4.000	12.451	-.001114	.06174	.03620	.02347	-.00029	.00016	.00226	26.33565	6.34518	3.48940
4.000	16.497	-.00102	.11008	.03645	.03900	-.00027	.00036	.00188	23.47987	6.34518	3.48940
4.000	20.413	-.00038	.15624	.03608	.05458	-.00028	.00040	.00150	21.57602	6.34518	3.48940
4.000	25.515	-.00140	.22281	.03526	.07711	-.00051	.00073	.00204	14.91253	7.29711	3.48940
4.000	30.569	-.00141	.31148	.03504	.09692	.00021	.00023	.00240	10.15289	10.15289	3.48940
4.000	35.637	-.00121	.39408	.03560	.11659	.00025	.00052	.00122	9.20996	13.96060	3.48940
GRADIENT		-.00031	.01436	-.00011	.00409	.00002	.00001	-.00012	-.81109	.31690	.00000

## PARAMETRIC DATA

(APM003) ( 06 FEB 74 )

DATE 06 FEB 74

TABULATED SOURCE DATA LANC INPUT 1031

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## MA-7, INPUT 1031, ROCKWELL PRR CRB. CONF. BTM40

(APR004) ( 06 FEB 74 )

## REFERENCE DATA

SHEP =	.7245 50. FT.	XNP =	12.9510 INCHES
LNP =	7.6620 INCHES	YNP =	0000 INCHES
SHEP =	15.1152 INCHES	ZNP =	0.0000 INCHES
SCALE =	.0150		

RUN NO. 73/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CTH	CY	PB1	PB2	PB3
4.000	12.350	-.000309	.07352	.03969	.02127	-.00001	.00051	.00083	7.15675	12.86631	5.34924
4.000	16.350	-.001030	.11602	.03793	.03599	-.00003	.00038	.00169	6.25482	12.86631	4.34926
4.000	20.419	-.002100	.18616	.03784	.05426	-.00002	.00061	.00147	6.20482	14.77216	5.34924
4.000	25.464	-.003152	.23491	.03661	.07412	-.00003	.00095	.00202	5.25269	14.77216	5.34924
4.000	30.582	-.004153	.31755	.03670	.09580	-.00002	.00145	.00237	5.25269	15.72409	5.34924
4.000	35.617	-.005117	.40362	.03629	.11558	-.00001	.00253	.00113	6.20482	15.72409	5.34924
GRADIENT		-.000305	.01415	-.00013	.00430	.00000	.00012	-.04998	.13773	-.01756	

(APR005) ( 06 FEB 74 )

## REFERENCE DATA

SHEP =	.7245 50. FT.	XNP =	12.9510 INCHES
LNP =	7.6620 INCHES	YNP =	0000 INCHES
SHEP =	15.1152 INCHES	ZNP =	0.0000 INCHES

RUN NO. 74/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CTH	CY	PB1	PB2	PB3
4.000	12.350	-.000359	.06783	.03623	.02433	-.00025	.00030	.00081	6.25482	12.86631	5.34924
4.000	16.376	-.001038	.11037	.03576	.04097	-.00027	.00038	.00188	6.25482	12.86631	5.34924
4.000	20.427	-.002086	.16229	.03551	.05544	-.00026	.00040	.00145	5.25269	14.77216	5.34924
4.000	25.468	-.003190	.23508	.03439	.07759	-.00024	.00035	.00196	5.25269	14.77216	5.34924
4.000	30.571	-.004137	.31171	.03379	.09698	-.00027	.00024	.00229	5.25269	15.72409	5.34924
4.000	35.627	-.005116	.39472	.03457	.11660	-.00023	.00014	.00112	6.20482	15.72409	5.34924
GRADIENT		-.000353	.01414	-.00015	.00404	-.00000	.00011	-.01495	.13753	-.01910	

(APR006) ( 06 FEB 74 )

## REFERENCE DATA

BETA	RNL	P0-JET =	37.000

C5

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPUT 1031

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(APM007) (06 FEB 74)

## REFERENCE DATA

WGT = .7245 80. FT. XREF = 12.9310 INCHES  
 LREF = 7.0026 INCHES YREF = .0000 INCHES  
 SREF = 15.1152 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0150

RUN NO. T5/ D RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CA	CLM	CPL	CYN	CV	PB1	PB2	PB3
4.000	12.350	-.00109	.00215	.00479	.02745	-.00277	.00017	.00215	7.15675	12.86631
4.000	16.429	-.00160	.11056	.05326	.04295	-.00079	.00025	.00317	7.15675	13.82023
4.000	20.481	-.00196	.16244	.03243	.05929	-.00082	.00013	.00415	6.20462	14.77216
4.000	23.507	-.00193	.22926	.03197	.06107	-.00102	.00050	.00334	6.20462	14.77216
4.000	30.574	-.00192	.31197	.03161	.10273	-.00055	.00011	.00264	7.15675	14.77216
4.000	35.619	-.00155	.39551	.03166	.12434	-.00075	.00019	.00242	7.15675	17.62794
GRADIENT		-.00002	.31451	-.000312	.03019	.00001	.00001	.00001	.00248	.16281
										.00000

(APM007) (06 FEB 74)

## REFERENCE DATA

WGT = .7245 80. FT. XREF = 12.9310 INCHES  
 LREF = 7.0026 INCHES YREF = .0000 INCHES  
 SREF = 15.1152 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0150

RUN NO. T6/ D RNL = 1.00 GRADIENT INTERVAL = -5.30/ 5.00

	ALPHA	BETA	CA	CLM	CPL	CYN	CV	PB1	PB2	PB3	
4.000	12.357	-.00166	.00033	.03063	-.00105	.00003	.00053	7.15675	13.82023	3.34904	
4.000	16.408	-.00160	.10470	.02996	.04037	-.00103	.00025	.00316	7.15675	13.82023	3.34904
4.000	20.460	-.00193	.15693	.02684	.06244	-.00129	.00014	.00408	7.15675	13.82023	3.34904
4.000	23.519	-.00160	.22920	.02793	.06310	-.00151	.00035	.00466	5.22289	13.82023	3.34904
4.000	30.573	-.00029	.30626	.02770	.10995	-.00080	.00057	.00505	6.20462	14.77216	3.34904
4.000	35.654	-.00196	.39503	.02630	.12636	-.00103	.00015	.00373	6.20462	16.67652	3.34904
GRADIENT		-.00002	.01448	-.000312	.02414	.00001	-.00002	.00004	-.02750	.10745	.00000

(APM007) (06 FEB 74)

## PARAMETRIC DATA

	BETA	RNL		BETA	RNL	
	-.000	1.000		-.000	1.000	

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CONTINUUM 6714

PO-SET	=	.000	PO-SET =	328.000
RNL	=	1.000		

GRADIENT INTERVAL = -5.88/ 1.88 = -3.11 dB/

(LM14000) (06 FEB 74 )

REFERENCE DATA

PO-JET = .000  
PO-JET = .000

RUN NO. 8

NA-7,INPUT 1031,ROCKWELL PFR ORG. CONF. BLM41 (APM010) 06 FEB 74 )

## REFERENCE DATA

STEP = .7245 30.5FT. XREF = 12.9310 INCHES  
 LREF = 7.8820 INCHES YREF = .0000 INCHES  
 GREF = 15.1152 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 67/0 RVAL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CX	CY	CZ	CX	CY	CZ	PB1	PB2	PB3
4.000	12.447	-.000369	.25077	.05774	-.03466	.00022	.00031	.00026	7.21636	8.16631	5.31253
4.000	16.369	-.000362	.37236	.05622	-.04422	.00050	.00033	.00033	6.26445	7.21636	5.31253
4.000	20.380	-.000362	.50418	.05819	-.04783	.00051	.00036	.00036	4.36060	7.21636	4.36060
4.000	25.392	-.000358	.68434	.05727	-.03995	.00076	.00036	.00036	4.36060	7.21636	4.36060
4.000	30.404	-.000340	.67896	.05689	-.04057	.00077	.00107	.00105	4.36060	6.26445	4.36060
4.000	35.415	.000413	1.00636	.05369	-.01191	.00129	.00098	.00126	4.36060	5.31253	4.36060
GRADIENT		.000033	.05866	-.00316	-.00286	.00024	.00033	-.00012	-.11671	-.117436	-.14469

NA-7,INPUT 1031,ROCKWELL PFR ORG. CONF. BLM41 (APM011) ( 06 FEB 74 )

## REFERENCE DATA

STEP = .7245 30.5FT. XREF = 12.9310 INCHES  
 LREF = 7.8820 INCHES YREF = .0000 INCHES  
 GREF = 15.1152 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 68/0 RVAL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CX	CY	CZ	CX	CY	CZ	PB1	PB2	PB3
4.000	12.400	-.000361	.25037	.05747	-.03456	.00046	.00031	.00097	5.31253	6.26445	4.36060
4.000	16.308	-.000361	.36642	.05764	-.03939	.00046	.00034	.00113	5.31253	6.26445	4.36060
4.000	20.347	-.000364	.49814	.05763	-.04650	.00051	.00076	-.00053	5.31253	6.26445	4.36060
4.000	25.374	-.000356	.68339	.05771	-.05992	-.11.052	.00097	-.00103	4.36060	6.26445	4.36060
4.000	30.409	-.000326	.67200	.05614	-.07965	.00076	.00085	-.00101	5.31253	6.26445	4.36060
4.000	35.430	.000404	1.00400	.05415	-.10374	.00105	.00099	.00080	4.36060	5.31253	4.36060
GRADIENT		.000034	.05556	-.00214	-.00284	.00022	.00033	-.00015	-.03471	-.02970	-.02970

## REFERENCE DATA

BETA = .000 RVAL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CX	CY	CZ	CX	CY	CZ	PB1	PB2	PB3
GRADIENT		.000033	.05774	-.03456	.00046	.00031	.00097	5.31253	6.26445	4.36060	

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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WA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BAN41

(APND12) ( 06 FEB 74 )

REFERENCE DATA

SERF	.7245 SE.FT.	XRP	=	12.9510 INCHES
LREF	7.8628 INCHES	YRP	=	.00000 INCHES
SERF	15.1152 INCHES	ZRP	=	6.00000 INCHES
SCALE	= .0150			

RUN NO. 69/0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.401	-.000051	.25246	.05752	-.03269	.00046	.00030	.00097	5.31253	6.26445	4.36060
4.000	16.506	-.000577	.36619	.05638	-.03910	.00046	.00033	.00111	5.31253	6.26445	5.31253
4.000	20.569	-.000229	.50363	.05820	-.04758	.00051	.00057	-.00059	5.31253	6.26445	5.31253
4.000	25.682	-.000295	.60324	.05784	-.05989	.00072	.00072	.00046	4.36060	6.26445	5.31253
4.000	30.776	-.000265	.87760	.05688	-.08075	.00076	.00085	-.00106	5.31253	5.31253	5.31253
4.000	35.906	-.000311	1.08975	.05400	-.10292	.00101	.00085	-.00125	4.36060	5.31253	5.31253
GRADIENT		.000022	.035983	-.00014	-.00298	.00022	.00013	-.00010	-.03472	-.04709	.02728

WA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BAN41

(APND13) ( 06 FEB 74 )

REFERENCE DATA

SERF	.7245 SE.FT.	XRP	=	12.9510 INCHES
LREF	7.8628 INCHES	YRP	=	.00000 INCHES
SERF	15.1152 INCHES	ZRP	=	6.00000 INCHES
SCALE	= .0150			

RUN NO. 70/0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.410	-.000051	.25023	.05740	-.03266	.00046	.00030	.00097	6.26445	6.26445	3.40867
4.000	16.549	-.000075	.37168	.05804	-.04013	.00046	.00033	.00106	5.31253	6.26445	4.36060
4.000	20.560	-.000042	.50321	.05872	-.04757	.00051	.00078	-.00057	4.36060	6.26445	4.36060
4.000	25.690	-.000040	.67703	.05665	-.05970	.00076	.00066	-.00290	4.36060	6.26445	4.36060
4.000	30.766	-.000026	.87767	.05641	-.07283	.00076	.00085	-.00116	5.31253	5.31253	4.36060
4.000	35.891	-.000013	1.06344	.05348	-.10363	.00124	.00104	-.00114	4.36060	5.31253	5.31253
GRADIENT		.000022	.035556	-.00017	-.00295	.00033	.00013	-.00010	-.05466	-.04716	.02728

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.

BNM41 (APM014) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XRP = 12.9510 INCHES  
 LREF = 7.8828 INCHES YRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 71/ 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.391	-.00061	.29333	.05812	-.05271	.00046	.00030	.00097	6.26445	6.26445	4.36060
4.000	16.500	-.00039	.37195	.05843	-.05829	.00046	.00054	.00108	5.31253	6.26445	4.36060
4.000	20.394	-.00103	.50894	.05801	-.04670	.00071	.00064	.00183	4.36060	6.26445	3.40867
4.000	25.682	-.00095	.68261	.05685	-.03978	.00072	.00072	.00246	4.36060	6.26445	3.40867
4.000	30.768	-.00126	.87703	.05637	-.07877	.00076	.00085	.00156	4.36060	5.31253	3.40867
4.000	35.929	-.00211	1.08920	.05582	-.10286	.00101	.00085	.00224	4.36060	5.31253	4.36060
GRADIENT	.00023	.03562	-.00018	-.00296	.00032	.00032	-.00011	-.07186	-.04704	-.04704	-.01481

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF.

BNM41 (APM015) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XRP = 12.9510 INCHES  
 LREF = 7.8828 INCHES YRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 72/ 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.460	-.00117	.25936	.05758	-.03575	.00042	.00017	.00233	6.26445	6.26445	4.36060
4.000	16.930	-.00089	.37174	.05820	-.03825	.00046	.00054	.00107	5.31253	6.26445	3.40867
4.000	20.573	-.00110	.50940	.05815	-.04672	.00071	.00064	.00184	4.36060	6.26445	3.40867
4.000	25.684	-.00093	.68863	.05721	-.06092	.00072	.00072	.00241	4.36060	6.26445	3.40867
4.000	30.904	-.00209	.88271	.05632	-.07986	.00107	.00093	.00311	4.36060	5.31253	4.36060
4.000	35.894	-.00062	1.08868	.05344	-.10280	.00097	.00092	.00217	3.40867	5.31253	4.36060
GRADIENT	.00021	.03569	-.00017	-.00296	.00032	.00032	-.00018	-.10177	-.04724	-.04724	.01995

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BATN1

(APM016) (06 FEB 74 )

## REFERENCE DATA

SREF =	.7245 30.FT.	XMRP =	12.9510 INCHES
LREF =	7.8626 INCHES	YMRP =	.00000 INCHES
BREF =	15.1152 INCHES	ZMRP =	6.00000 INCHES
SCALE =	.0193		

RUN NO. 19/0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
2.900	-.155	-.00034	-.01637	.08726	-.00920	-.00008	.00029	-.00044	108.93403	124.16486	48.96263
2.900	4.111	.00132	.11155	.08401	-.02545	.00007	.00018	-.00092	104.17439	108.93403	53.72226
2.900	6.362	.00190	.23684	.08105	-.04194	.00027	.00027	-.00189	89.89549	93.70329	47.05877
2.900	12.682	.00261	.36629	.07750	-.05682	.00037	.00025	-.00178	61.33768	80.37622	40.39529
2.900	16.957	.00321	.50349	.07350	-.07174	.00043	.00044	-.00192	47.05877	66.09732	34.68372
2.900	21.300	.00172	.64945	.07078	-.08569	.00048	.00055	-.00177	31.32794	52.77034	34.68372
GRADIENT	.00039	.02999	.00077	-.00381	.00014	-.00033	-.00011	-1.11572	-3.57128	1.11571	

RUN NO. 19/0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
2.900	-.221	-.00096	-.02462	.07986	-.01159	.00027	.00031	-.00037	74.66466	80.37622	25.16445
2.900	4.014	.00207	.08571	.07675	-.02407	.00032	.00037	-.00102	74.66466	69.91052	28.10204
2.900	6.369	.00176	.20655	.07423	-.03507	.00029	.00047	-.00166	56.37805	57.52997	24.21253
2.900	12.547	.00220	.32286	.07124	-.04634	.00048	.00144	-.00210	38.49143	48.51070	20.40482
2.900	16.765	.00215	.45260	.06894	-.06001	.00054	.00143	-.00199	27.56831	39.44336	17.54904
2.900	21.013	.00228	.59393	.06602	-.07237	.00054	.00142	-.00202	21.35675	31.87602	16.59711
GRADIENT	.00034	.02615	-.00076	-.00295	.00011	.00001	-.00015	-.00001	-2.47254	.67433	

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7,UPNT 1031,ROCKWELL PRR ORB. CONF. BWTN1

(APM017) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 50-FT. XRP = 12.9510 INCHES  
 LREF = 7.8626 INCHES YRP = .0000 INCHES  
 DREF = 15.1132 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0193

	RUN NO.	16/ 0	RNL = 3.00	GRADIENT INTERVAL = -5.00/ 5.00						
MACH	ALPHA	BETA	CN	CLM	CBL	CYN	CY	FB1	FB2	FB3
2.900	-1.78	-5.17613	-.01498	.08868	-.01033	-.00223	-.00071	.07813	148.91496	147.96304
2.900	4.046	-5.16699	.10991	.08560	-.02724	-.00112	.09057	.07226	128.02450	130.82335
2.900	8.036	-5.15995	.23870	.08140	-.01538	.00576	.00180	.06730	109.88596	114.64559
2.900	12.710	-5.15773	.36759	.07765	-.05847	.00282	.00310	.06439	94.65512	100.36669
2.900	17.149	-5.15733	.59895	.07391	-.07282	.00411	.00515	.06136	80.37622	85.13386
2.900	21.293	-5.15969	.63593	.07023	-.08594	.00535	.00704	.05999	73.71273	71.80388
GRADIENT		.00216	.02957	-.10073	-.00400	.00226	.00030	-.00139	-4.73259	-4.05651

MA-7,UPNT 1031,ROCKWELL PRR ORB. CONF. BWTN1

(APM018) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 50-FT. XRP = 12.9510 INCHES  
 LREF = 7.8626 INCHES YRP = .0000 INCHES  
 DREF = 15.1132 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0193

	RUN NO.	16/ 0	RNL = 3.00	GRADIENT INTERVAL = -5.00/ 5.00						
MACH	ALPHA	BETA	CN	CLM	CBL	CYN	CY	FB1	FB2	FB3
2.900	-1.90	-.00215	-.01503	.08756	-.00863	-.00048	.00033	.00045	184.13626	181.81341
2.900	4.107	.00145	.11419	.08451	-.02638	.00217	.00014	-.00092	172.71314	50.86648
2.900	8.433	.00196	.23950	.08124	-.04246	.00215	.00021	-.00129	153.67460	48.01370
2.900	12.665	.00265	.36756	.07763	-.05750	.00032	.00025	-.00180	127.92064	42.29114
2.900	17.096	.00237	.50776	.07428	-.07209	.00043	.00044	-.00195	99.41476	53.73180
2.900	21.303	.00203	.63126	.07071	-.08599	.00119	.00069	-.00208	79.42429	35.63565
GRADIENT		.00244	.03207	-.00078	-.00413	.0006	-.0004	-.00011	-.22153	.86613

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM019) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM020) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM021) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM022) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM023) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM024) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM025) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM026) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM027) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM028) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM029) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM030) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM031) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM032) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM033) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM034) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM035) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM036) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM037) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM038) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM039) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM040) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM041) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM042) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM043) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM044) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM045) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM046) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM047) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM048) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM049) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM050) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM051) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM052) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM053) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM054) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM055) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM056) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM057) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM058) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM059) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM060) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM061) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM062) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM063) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM064) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM065) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM066) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM067) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM068) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM069) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM070) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM071) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM072) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM073) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM074) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM075) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM076) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

(APM077) ( 06 FEB 74 )

## PARAMETRIC DATA

BETA = -.0000  
 RNL = 3.000

DATE OF PERS 74

REGULATED SOURCE DATA LARC UNIT 1031

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EXPERIMENTAL DATA

SCALE =	.0150		
SIDEY =	7.8820 INCHES	ZNP =	12.9510 INCHES
LAEF =	7.8820 INCHES	YNP =	.0000 INCHES
BSEF =	15.1152 INCHES	ZNP =	6.0000 INCHES
BETA =	-5.000	PO-JET =	167.0000
RNL =	3.000		

## PARAMETRIC DATA

	RUN NO.	17/0	RNL/V =	3.00	GRADIENT INTERVAL =	-5.00/ 5.00
C4	ALPHA	BETA	CN	CA	CLM	CBL
5000	-214	-5.17555	-0.01631	.08674	-.01094	-.00228
5000	4,136	-5.16595	11.380	.08569	-.02795	-.00104
5000	6,391	-5.15979	.25971	-.06175	-.04340	.00170
5000	12,719	-5.15797	.35768	.07765	-.05849	.00256
5000	16,975	-5.15725	.50266	.07420	-.07208	.00400
5000	21,286	-5.15921	.64659	.07026	-.08546	.00552
GRADIENT		.002221	.022991	-.032070	-.00391	.000329
						.000331

MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF. BK/TN1

(APMDO20) ( DS FEB 74 )

REFERENCE DATA

SREF =	.7745 SQ.FT.	XREF =	12.9510 INCHES
LREF =	2.4829 INCHES	YREF =	.0000 INCHES
BREF =	19.1152 INCHES	ZREF =	6.0000 INCHES

$$\begin{array}{rcl} \text{BETA} & = & .000 \\ \text{RNL} & = & 3.000 \end{array}$$

	RUN NO.	20/ 0	R/V/L =	3.00	GRADIENT INTERVAL =	-5.00/	5.00
MACH	ALPHA	BETA	CN	CLM	CBL	CYN	CY
2.950	-.226	-.00055	-.02310	.06005	-.01233	.00027	-.00038
2.950	3.961	.00072	.08415	.07707	-.02427	.00032	.00101
2.950	6.246	.03142	.20337	.07436	-.03496	.00235	-.00161
2.950	12.527	.03220	.52282	.07141	-.04683	.00048	-.00200
2.950	16.847	.03274	.45416	.06881	-.06128	.00055	-.00235
2.950	21.077		.01217	.59179	.06555	-.07255	.00048

	PB1	PB2	PB3
1.11679	29.92409	25.16	
.59752	27.06831	26.11	
.51091	24.21253	24.212	
.52044	18.50096	19.45	
.62612	18.50096	17.54	
1.15492	21.40482	18.50	

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MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF. BM/TN1

(APM021) (06 FEB 74)

## REFERENCE DATA

SREF = .7245 SQ.FT. XRP = 12.9510 INCHES  
 UREF = 7.0028 INCHES YRP = .0000 INCHES  
 DREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 1/0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.413	-.00005	.24297	.06200	-.02922	.00053	.00054	-.00147	.0.02977	6.12591	2.31821
4.0000	16.526	-.00021	.36034	.06053	-.03430	.00052	.00051	-.00131	.7.07784	6.12591	2.31821
4.0000	20.559	-.00032	.49785	.06020	-.04278	.00075	.00045	-.00093	5.17399	6.12591	2.31821
4.0000	25.703	-.00037	.67676	.05949	-.05512	.00047	.00065	-.00098	5.17399	6.12591	2.31821
4.0000	30.767	-.00016	.87078	.05653	-.07387	.00085	.00042	-.00101	6.12591	4.22206	2.31821
4.0000	35.932	.00043	1.07688	.05301	-.09886	.00081	.00078	-.00262	5.17399	4.22206	2.31821
GRADIENT	.00002	.03566	-.00036	-.00297	.00201	.00001	-.00003	-.00922	-.09425	-.00021	

MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF. BM/TN1

(APM022) (06 FEB 74)

## REFERENCE DATA

SREF = .7245 SQ.FT. XRP = 12.9510 INCHES  
 UREF = 7.0028 INCHES YRP = .0000 INCHES  
 DREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 0/0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.391	-2.51264	.24274	.06210	-.02753	.00114	.00156	.02860	9.98170	7.07784	2.31821
4.0000	16.486	-2.51291	.35945	.06115	-.03422	.00190	.00227	.02756	9.12591	6.12591	1.36528
4.0000	20.569	-2.51345	.49640	.06076	-.04071	.00237	.00284	.02812	8.02777	6.12591	1.36528
4.0000	25.639	-2.51338	.67558	.05899	-.05488	.00262	.00379	.02671	7.07784	5.17399	1.36528
4.0000	30.784	-2.51287	.86311	.05755	-.07258	.00418	.00289	.02694	6.12591	6.12591	1.36528
4.0000	35.893	-2.51157	1.07429	.05357	-.09652	.00470	.00415	.02262	8.02777	5.17399	1.36528
GRADIENT	.00004	.03546	-.00034	-.00290	.00015	.00009	-.00020	-.06693	-.06201	-.02729	

## PARAMETRIC DATA

BETA = .000 RN/L = 1.00 PO-JET = .000

(APM021) (06 FEB 74)

## PARAMETRIC DATA

BETA = -.2.500 RN/L = 1.00 PO-JET = .000

(APM022) (06 FEB 74)

DATE 22 FEB 74

TABULATED SOURCE DATA LARC UNIT 103:

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NA-7, UPFT 1031, ROCKWELL PRR ORG. CONF. BULLN

REFERENCE DATA

SA-FT.	.7245	SA-FT.	X4RP	=	12.9510	INCHES
INCHES	7.8826	INCHES	Y4RP	=	.0000	INCHES
INCHES	15.1152	INCHES	Z4RP	=	6.0000	INCHES
SCALE	.0150					

PARAMETRIC DATA

BETA	=	-3.000	Po-JET	=	.000
RN/L	=	1.000			.

RUN NO.	7 / 0	RVL =	1.00	GRADIENT INTERVAL =	-5.00	/ 5.00
1	CN	CA	CLM	COL	CYN	C
2	.24113	.26137	.20270	.00255	.00451	.05370
3	.35624	.36137	.03041	.00383	.00451	.05370
4	.50299	.06951	.04149	.00533	.00547	.05429
5	.66776	.05679	.05338	.00630	.00667	.05448
6	.86649	.05813	.07425	.00639	.00654	.05454
7	1.07193	.05411	.06959	.00891	.00887	.05459
8	1.02331	.03543	.02030	.00245	.00216	.05459

		PB1	PB2	PB3
CY	.05598	10.88855	8.98170	2.3186
	.05370	9.93362	8.02977	1.3666
	.05429	8.98170	8.02977	1.3666
	.05048	8.02977	7.07784	1.3666
	.04934	7.07784	7.07784	1.3666
	.04509	7.07784	8.98170	1.3666
				-.01961
				-.02774
DO/	5.00			

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APM24 (DBE) 74

#### REFERENCE DATA

SHEET	.7245	SQ.FT.	X48P	=	12.9510 INCHES
REF	7.6926	INCHES	Y48P	=	.0000 INCHES
SHEET	15.1152	INCHES	Z48P	=	6.0000 INCHES

$$\frac{\beta_{11}}{\beta_{11} - 1} = \frac{3,000}{3,000 - 1} = .999$$

CY	PB1	PB2	PB3
.00240	20.401482	17.54904	5.1735
.00235	17.545914	14.69326	5.1735
.00228	14.69326	12.78940	5.1735
.00212	11.83748	11.37408	5.1735
.00173	12.78940	13.74133	5.1735
.00052	12.78940	9.93362	5.1735
-.00007	-.31238	-.23871	-.00007

MA-7, UFWT 1031, ROCKWELL PRR ORB. CONF. BMTN1

(APM025) ( 06 FEB 74 )

## REFERENCE DATA

STEP = .7245 SQ.FFT. XHBP = 12.9510 INCHES  
 LSF = 7.6626 INCHES YHBP = .0000 INCHES  
 BREF = 15.1152 INCHES ZHBP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 13/ 0 RN/L = 4.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CBL	CYN	CY	FB1	PB2	PB3
4.000	12.955	-.00504	.26131	.06052	-.03215	.00044	.00033	.00151	.30.87602	30.87602	6.98170
4.000	17.325	-.00427	.38513	.05937	-.04001	.00041	.00040	.00106	24.21253	25.16445	8.98170
4.000	21.674	-.00392	.52037	.05893	-.04730	.00046	.00044	.00098	23.26060	19.45289	8.98170
4.000	27.212	-.00265	.71743	.05735	-.06321	.00051	.00053	.00023	14.69326	17.5904	8.98170
GRADIENT		.00016	.03204	-.002822	-.00215	.00001	.00001	-.00099	-1.06054	-.95339	.00000

MA-7, UFWT 1031, ROCKWELL PRR ORB. CONF. BMTN1

(APM026) ( 06 FEB 74 )

## REFERENCE DATA

STEP = .7245 SQ.FFT. XHBP = 12.9510 INCHES  
 LSF = 7.6626 INCHES YHBP = .0000 INCHES  
 BREF = 15.1152 INCHES ZHBP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 2/ 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CBL	CYN	CY	FB1	PB2	PB3
4.000	12.425	-.00063	.25732	.06141	-.02813	.00025	.00041	-.00006	7.07784	3.27013	2.31821
4.000	16.516	-.00377	.36023	.06054	-.03431	.00024	.00038	.00004	7.07784	3.27013	2.31821
4.000	20.568	-.00269	.49152	.06038	-.04166	.00047	.00032	.00047	8.02977	3.27013	2.31821
4.000	25.676	-.00037	.67075	.05581	-.05732	.00025	.00065	-.00099	8.98170	3.27013	2.31821
4.000	30.775	-.00271	.86466	.05586	-.07476	.00033	.00029	.00033	6.12591	3.27013	2.31821
4.000	35.869	-.00010	1.07041	.05250	-.09584	.00005	.00065	-.00132	6.12591	3.27013	2.31821
GRADIENT		.00002	.03555	-.00038	-.00290	-.00001	-.00001	-.00004	-.04475	.00000	-.00000

PARAMETRIC DATA

BETA = .000

RN/L = 5.000

PARAMETRIC DATA

BETA = .000

RN/L = 1.000

PARAMETRIC DATA

BETA = .000

RN/L = 35.000

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BURN1

(APM027) ( 06 FEB 74 )

REFERENCE DATA

SREF = .7245 56.1FT. XRP = 12.9510 INCHES  
LREF = 7.6626 INCHES YRP = .0000 INCHES  
BREF = 15.1132 INCHES ZRP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 12/ 0 RN/L = 2.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.950	-.00430	.25661	.06091	-.031135	.00026	.00030	.00240	28.02024	7.07784	5.11799
4.000	16.660	-.00464	.37443	.05993	-.03941	.00034	.00043	.00236	22.30987	6.12591	5.11799
4.000	21.111	-.00398	.90716	.05915	-.04633	.00036	.00047	.00219	22.30867	6.12591	5.11799
4.000	26.401	-.00346	.68722	.05831	-.05907	.00019	.00064	.00231	27.06831	6.12591	5.11799
4.000	31.725	-.00341	.89793	.05603	-.07929	.00039	.00037	.00168	25.16445	6.12591	5.11799
4.000	.093	-.00249	1.10631	.05332	-.10364	.00023	.00082	.00246	15.64518	6.12591	5.11799
GRADIENT	.00006	.03496	-.03130	-.02291	-.00000	.00022	-.00007	-.28447	-.02616	-.00000	

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BURN1

(APM028) ( 06 FEB 74 )

REFERENCE DATA

SREF = .7279 56.1FT. XRP = 12.9510 INCHES  
LREF = 7.6626 INCHES YRP = .0000 INCHES  
BREF = 15.1132 INCHES ZRP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 14/ 0 RN/L = 4.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.978	-.00443	.26251	.06049	-.03199	.00040	.00036	.00121	48.96663	10.88555	9.93362
4.000	17.306	-.00429	.38513	.05938	-.03963	.00045	.00040	.00107	40.39329	9.93362	8.98170
4.000	21.636	-.00406	.52202	.05839	-.04755	.00051	.00049	.00088	42.29914	9.93362	8.98170
4.000	27.153	-.00272	.71516	.05720	-.06239	.00037	.00017	.00222	42.2994	9.93362	9.93362
GRADIENT	.00012	.03199	-.00223	-.00213	-.00000	.00002	-.00007	-.36837	-.03866	.00514	

DATE 28 FEB 74

TABULATED SOURCE DATA LARC UPMT 1031

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BISAMETRIC DATA

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	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.426	-0.03117	.23741	.06305	-.02624	-.00033	.00127	32.77987	3.27013	2.31862	
4.0000	18.533	-0.03134	.35424	.05981	-.03318	-.00034	.00144	28.02024	3.27013	2.31862	
4.0000	20.544	-0.03041	.46571	.05860	-.04053	-.00020	.00168	20.40182	3.27013	2.31862	
4.0000	23.703	-0.03113	.68469	.05763	-.05292	-.00193	.00196	11.83748	3.27013	2.31862	
4.0000	30.781	-0.02092	.85276	.05319	-.07260	-.00386	.00216	7.07784	3.27013	2.31862	
4.0000	35.636	-0.02087	1.06432	.05177	-.09668	-.00119	.00296	6.12591	3.27013	2.31862	
GRADIENT	.0202031	.03525	-.002037	-.001295	-.000036	.00003	-.000035	-.12.22827	.00000	.00000	

DATA SHEET

#### PARAMETRIC DATA

卷之三

DATE 08 FEB 74

TABULATED SOURCE DATA LARL UPRT 1031

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MA-7, UPRT 1031, ROCKWELL, PAR ORG, CONF. BMTHS

(APM031) (08 FEB 74)

REFERENCE DATA

SUPER =	.7243 30.FT.	YRSP =	12.9910 INCHES
LNGP =	7.8628 INCHES	YRSP =	.00000 INCHES
GRAD =	15.1152 INCHES	ZHRP =	6.00000 INCHES
SCALE =	.0150		

RUN NO. 9/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLB	CYN	CY	PB1	PB2	PB3
4.000	12.410	5.04680	.23922	.06161	-.02477	-.00449	-.03293	-.04685	36.58756	3.27013	2.31821
4.000	16.527	5.04685	.36224	.06034	-.03294	-.05620	-.02366	-.04573	14.69326	3.27013	2.31821
4.000	20.598	5.04686	.49400	.06006	-.04243	-.00696	-.00469	-.24417	8.98170	2.31821	1.36626
4.000	25.666	5.04682	.63749	.05617	-.05562	-.00673	-.00586	-.04299	6.12291	2.31821	1.36626
4.000	30.765	5.04593	.85906	.05905	-.06905	-.01012	-.00611	-.04367	5.17399	2.31821	1.36626
4.000	35.867	5.04526	1.05769	.05340	-.09203	-.01077	-.00679	-.03823	4.22206	2.31821	2.31821
	68401507	7.320326	.03522	-.02032	-.03261	-.00207	-.00017	.00036	-1.13161	-.04465	-.01483

MA-7, UPRT 1031, ROCKWELL, PAR ORG, CONF. BMTHS

(APM032) (08 FEB 74)

REFERENCE DATA

SUPER =	.7243 30.FT.	YRSP =	12.9910 INCHES
LNGP =	7.8628 INCHES	YRSP =	.00000 INCHES
GRAD =	15.1152 INCHES	ZHRP =	6.00000 INCHES
SCALE =	.0150		

RUN NO. 9/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CLB	CYN	CY	PB1	PB2	PB3
4.000	12.410	-2.51328	.24274	.06196	-.02733	-.00110	.00121	.02999	36.58756	4.22206	1.36626
4.000	16.527	-2.51344	.35955	.06087	-.03235	.00138	.00215	.02865	29.92197	3.27013	1.36626
4.000	20.575	-2.51368	.48476	.05844	-.03845	.00165	.00249	.02939	36.50756	3.27013	1.36626
4.000	25.679	-2.51367	.67009	.05712	-.03194	.00205	.00446	.02642	15.64316	3.27013	1.36626
4.000	30.752	-2.51365	.85766	.05645	-.06972	.01224	.00364	.02802	7.07784	2.31821	1.36626
4.000	35.828	-2.51241	1.06298	.05219	-.09256	.01251	.00469	.02368	6.12291	2.31821	1.36626
	GRADIENT	.05032	.03509	-.00238	-.00216	.00135	.00114	-.03223	-1.47375	-.07445	.031203

DATE 06 FEB 74

TABULATED SOURCE DATA LARC INPUT 1031

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MA-7, INPUT 1031, ROCKWELL PRR ORB. CONF. BATTN1

## REFERENCE DATA

SPEC = .7245 30.FT. 1000P = 12.3510 INCHES  
 LREF = 7.0020 INCHES 1000P = .00000 INCHES  
 SREF = 15.1152 INCHES 2000P = 6.00000 INCHES  
 SCALE = .0150

RUN NO. 61/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.356	-5.04052	.23161	.06135	-.02718	.00259	.00316	.05456	43.25107	3.27013	2.31821
4.000	16.536	-5.04056	.36419	.06114	-.03514	.00359	.00431	.05359	38.59143	3.27013	2.31821
4.000	20.642	-5.04190	.49477	.06203	-.04940	.00479	.00548	.05328	29.24049	3.27013	2.31821
4.000	25.657	-5.04263	.66814	.05734	-.05151	.00511	.00691	.05022	34.68372	3.27013	2.31821
4.000	30.761	-5.03982	.85579	.05621	-.07116	.00629	.00736	.04761	15.64518	3.27013	1.36628
4.000	35.866	-5.03911	1.06268	.05221	-.09209	.00677	.00847	.04472	11.83748	3.27013	2.31821
GRADIENT	.00001	.03491	-.00039	-.03272	.05118	.00122	-.00144	-.1.34383	-.03000	-.01736	

MA-7, INPUT 1031, ROCKWELL PRR ORB. CONF. BATTN1

## REFERENCE DATA

SPEC = .7245 30.FT. 1000P = 12.9510 INCHES  
 LREF = 7.0020 INCHES 1000P = .00000 INCHES  
 SREF = 15.1152 INCHES 2000P = 6.00000 INCHES  
 SCALE = .0150

RUN NO. 91/0 RNL = 2.99 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.717	-.00495	.25661	.02967	-.03134	.00024	.00026	.00267	73.71273	6.12591	6.12591
4.000	16.899	-.00490	.37445	.03875	-.03834	.00034	.00036	.00235	76.56851	6.12591	6.12591
4.000	21.127	-.00514	.50322	.05615	-.04593	.00017	.00015	.00271	53.72226	7.07784	7.07784
4.000	26.366	-.00410	.66550	.05735	-.05673	-.00066	.00106	.00117	35.63585	6.12591	6.12591
4.000	31.600	-.00416	.86629	.05553	-.07836	-.00065	.00069	.00151	18.51096	6.12591	5.17399
4.000	37.035	-.00414	1.10277	.05276	-.10219	-.00091	.00111	.00124	10.68355	6.12591	5.17399
GRADIENT	.00004	.03405	-.00030	-.00207	-.00316	.00014	-.00017	-.00227	-.00126	-.00173	

(AFMD33) ( 06 FEB 74 )

PARAMETRIC DATA

BETA = -.000  
 RNL = 1.000

BETA = -5.000  
 RNL = 5.000

(AFMD34) ( 06 FEB 74 )

PARAMETRIC DATA

BETA = '000  
 RNL = 5.000

BETA = '000  
 RNL = 5.000

(AFMD34) ( 06 FEB 74 )

PARAMETRIC DATA

NA-7, UPNT 1031, ROCKWELL PAR ORG. CONF. BUTTM (APPROV) ( 08 FEB 74 )

## REFERENCE DATA

BNGT =	.7245 SE. FT.	INSP =	12.9310 INCHES
LNDY =	7.6828 INCHES	THRD =	.00000 INCHES
BLDF =	15.1152 INCHES	ZNSP =	6.22000 INCHES
SCALE =	.0190		

RUN NO. 10/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

NUC1	ALPHA	BETA	CN	CA	CLN	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.410	-.001356	.23785	.06033	-.02447	-.00139	-.00223	.00661	34.69372	3.27013	1.36626
4.000	16.923	-.001367	.34923	.05668	-.02651	-.00234	.00237	.00665	21.35675	3.27012	1.36626
4.000	20.608	-.001319	.49640	.05628	-.03697	-.00263	.00275	.00689	11.53748	5.27013	1.36626
4.000	23.697	-.001361	.68073	.05603	-.04629	-.00362	.00159	.00677	8.99175	2.31621	1.36626
4.000	30.762	-.000904	.85375	.05334	-.06719	-.00305	.00223	.00661	6.12591	2.31621	1.36626
4.000	35.957	-.001410	1.08510	.05251	-.09131	-.00353	.00116	.00649	5.17399	2.31621	1.36626
4.000	GRADIENT	-.000004	.03529	-.00031	-.00262	-.00036	.00214	.00005	-1.15408	-.05197	.00000

## PARAMETRIC DATA

MA-7, UFWT 1031, ROCKWELL PRR ORB. CONF.

BMTR4 (APM036) (06 FEB 74)

## REFERENCE DATA

SREF =	.7245 SQ.FT.	XMRP =	12.9510 INCHES
LREF =	7.8826 INCHES	YMRP =	.0000 INCHES
BREF =	15.1152 INCHES	ZMRP =	6.0000 INCHES
SCALE =	.0150		

RUN NO.	37 / 0	RNL =	3.00	GRADIENT INTERVAL = -5.00/ 5.00							
MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	FB1	FB2	PB3
2.500	-216	.00140	-.01998	.08722	-.000819	.00018	.00035	-.00113	105.86669	129.66406	53.51070
2.500	4.070	.00295	.08861	.08419	-.02567	.00010	.00019	-.00146	101.10705	111.57825	56.36649
2.500	6.460	.00389	.23795	.08107	-.04295	.00022	.00025	-.00212	85.87622	95.39449	48.75107
2.500	12.685	.00431	.36432	.07751	-.05692	.00034	.00032	-.00302	60.17419	82.06651	43.99143
2.500	16.962	.00346	.592211	.07429	-.07159	.00027	.00027	-.00327	44.94336	67.78961	35.42409
2.500	21.358	.00361	.64999	.07081	-.08611	.00028	.00029	-.00349	30.66445	53.51070	35.42409
GRADIENT	.00027	.0305.3	-.000371	-.000408	-.000507	-.000507	-.000504	-.000508	-1.11051	-4.21993	.66630

RUN NO. 39 / 0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

RUN NO.	39 / 0	RNL =	3.00	GRADIENT INTERVAL = -5.00/ 5.00							
MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	FB1	FB2	PB3
2.995	-1.82	.00031	-.02428	.08032	-.01173	.00026	.00021	-.00045	71.59732	83.97237	27.80867
2.995	4.065	.00157	.08384	.07701	-.02458	.00028	.00034	-.00129	72.54924	72.54924	18.760.1
2.995	8.363	.00131	.20446	.07439	-.03550	.00022	.00037	-.00119	55.41456	59.22226	25.90462
2.995	12.871	.00206	.32324	.07138	-.04649	.00045	.00022	-.00137	36.37602	48.75107	24.00096
2.995	16.769	.00257	.45020	.06893	-.05020	.00041	.00025	-.00165	26.05675	41.13565	19.24133
2.995	21.026	.00295	.59210	.06698	-.07290	.00054	.00040	-.00200	20.19326	32.56831	19.24133
GRADIENT	.00030	.02546	-.000273	-.000303	-.000300	-.000303	-.000303	-.00020	.22414	-2.68369	.22414

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BM/TM

(APM037) ( 06 FEB 74 )

REFERENCE DATA

SREF = .7245 SQ.FT. XRP = 12.9510 INCHES  
UREF = 7.6626 INCHES YRP = .00000 INCHES  
BREF = 15.1152 INCHES ZRP = 6.00000 INCHES  
SCALE = .0150

RUN NO. 40/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CYR	PB1	PB2	PB3
2.950	-.234	-.00029	-.03038	.07732	-.00360	.00013	.00017	-.00038	72.54924	84.92425	32.56831
2.950	4.046	.00116	.07963	.07458	-.02126	.00005	.00026	-.00037	74.45310	72.54924	32.56831
2.950	6.207	.00012	.19550	.07269	-.03237	.00001	.00030	-.00046	56.36646	59.22226	28.76060
2.950	12.485	.00145	.31293	.06875	-.04301	.00015	.00018	-.00030	48.75107	26.85675	
2.950	16.770	.00164	.44743	.06628	-.05669	.00059	.00014	-.00039	25.90482	41.13563	23.94904
2.950	21.054	.00095	.56634	.06342	-.06840	-.00016	.00022	-.00029	21.14518	33.52024	23.04904
	GRADIENT	.000234	.02563	.07034	-.00296	-.00022	.00002	-.00021	.44483	-2.89137	.00000

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BM/TM

(APM038) ( 06 FEB 74 )

REFERENCE DATA

SREF = .7245 SQ.FT. XRP = 12.9510 INCHES  
UREF = 7.6626 INCHES YRP = .00000 INCHES  
BREF = 15.1152 INCHES ZRP = 6.00000 INCHES  
SCALE = .0150

RUN NO. 38/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CYR	PB1	PB2	PB3
2.500	-.174	.000278	-.02368	.08457	-.00163	-.00019	.00032	-.00079	104.91476	129.66486	57.31841
2.500	4.069	.00225	.10226	.08174	-.02266	-.00013	.00017	-.00115	102.0598	111.57825	55.41456
2.500	6.332	.00291	.23016	.07953	-.03963	-.00051	.00009	-.00149	87.78107	96.34742	48.75107
2.500	12.641	.00289	.35731	.07515	-.05501	.00204	.00013	-.00152	60.17419	83.02044	45.89529
2.500	16.985	.00307	.49577	.07143	-.06773	-.00056	.00020	-.00166	44.94336	57.78961	43.03951
2.500	21.265	.00273	.64131	.06781	-.08295	-.00044	.00030	-.00159	33.52024	60.17419	43.03951
	GRADIENT	.00035	.02972	-.00267	-.00041	.00021	-.00016	-.00008	.67706	-4.26269	-.44871

DATE 08 FEB 74

TABULATED SOURCE DATA LARC UPWT 1031

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MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF. BM7N4

(APM039) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XMRP = 12.9510 INCHES  
 LREF = 7.8828 INCHES YMRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 830/ 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	PO-JET	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	-.547	-.002267	.79565	.05874	-.06995	.000035	.00087	.00517	5.91435	5.91435	4.01050
4.000	-.092	-.00210	.79563	.05836	.05996	.000039	.00101	.00377	4.01050	4.01050	4.01050
4.000	38.131	-.00279	.79383	.05585	-.06885	-.00013	.00109	.00513	4.96243	4.96243	4.01050
4.000	198.760	-.00240	.78026	.04692	-.05705	-.00376	.00211	.00106	4.96243	4.96243	4.01050
4.000	327.310	-.00276	.76585	.04340	-.04895	-.00471	.00375	.00115	4.01050	4.01050	4.01050
4.000	601.246	-.00320	.75179	.03212	-.03565	-.00523	.00539	.00226	4.01050	4.01050	4.01050
GRADIENT		.00125	.00147	-.00384	-.00213	.00029	.00031	-.00308	-4.18429	-4.18429	.00000

MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF. BM7N4

(APM040) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XMRP = 12.9510 INCHES  
 LREF = 7.8828 INCHES YMRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 26/ 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.447	-.00120	.24425	.06302	-.02994	.00042	.00016	.00242	8.777013	7.81821	4.96243
4.000	16.485	-.00029	.36149	.08228	-.03703	.00044	.00029	.00150	7.81821	6.86628	4.96243
4.000	20.642	-.00089	.50129	.06172	-.04491	.00067	.00033	.00186	6.86628	6.86628	4.96243
4.000	25.645	-.00096	.67606	.05904	-.05887	.00044	.00058	.00166	5.91435	6.86628	4.96243
4.000	30.765	-.00059	.87598	.05698	-.08077	.00091	.00015	.00180	5.91435	6.86628	4.96243
4.000	35.892	-.00012	1.08561	.03304	-.10478	.00096	.00071	.00019	5.91435	4.01050	4.01050
GRADIENT		.00204	.03598	-.00042	-.00316	.00002	.00002	-.00016	-.12418	-.05717	-.04722

PARAMETRIC DATA

ALPHA = 27.500  
 RN/L = 1.000

(APM040) ( 06 FEB 74 )

PARAMETRIC DATA

BETA = .000  
 RN/L = 1.000

(APM040) ( 06 FEB 74 )

PARAMETRIC DATA

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BM714

(APM411) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 50. FT. XHXP = 12.9510 INCHES  
 LREF = 7.6626 INCHES YHXP = .0000 INCHES  
 DREF = 15.1152 INCHES ZHXP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 34 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLW	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.434	-2.51257	.25533	.56127	-.03004	.05187	.00200	.02237	6.77013	7.81821	4.01050
4.0000	16.513	-2.51333	.37803	.56077	-.03815	.05256	.00281	.02302	7.61821	7.81821	4.01050
4.0000	20.576	-2.51316	.51758	.56926	-.04798	.05310	.00340	.02355	6.86628	6.86628	4.01050
4.0000	25.713	-2.51365	.70377	.56540	-.06234	.05335	.00428	.02810	5.91435	6.86628	4.01050
4.0000	30.775	-2.51315	.99058	.56583	-.07962	.05325	.00337	.02241	5.591435	6.86628	4.01050
4.0000	35.926	-2.51161	1.10695	.56218	-.10295	.0562	.00463	.02402	6.86628	5.91435	4.01050
GRADIENT	.000003	.03626	-.00036	-.00037	.00016	.00009	-.00015	-.00414	-.07441	-.010000	

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BM714

(APM422) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 50. FT. XHXP = 12.9510 INCHES  
 LREF = 7.6626 INCHES YHXP = .0000 INCHES  
 DREF = 15.1152 INCHES ZHXP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 31 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLW	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.474	-5.04082	.28044	.56254	-.03108	.03353	.00348	.05583	10.67399	9.772206	4.01050
4.0000	16.543	-5.04132	.37733	.61598	-.03805	.03452	.00484	.05521	10.67399	8.77013	4.01050
4.0000	20.673	-5.04205	.52259	.61115	-.04862	.03572	.00570	.05579	8.77013	8.77013	4.01050
4.0000	25.667	-5.04107	.69724	.59923	-.06078	.03717	.00717	.05194	7.81821	7.81821	4.01050
4.0000	30.733	-5.04042	.88971	.58903	-.07953	.03923	.00703	.05087	6.86628	7.81821	4.01050
4.0000	35.916	-5.03925	1.10612	.55369	-.10268	.01039	.00849	.04659	6.86628	8.77013	4.01050
GRADIENT	.00007	.03613	-.00034	-.00032	.00029	.00020	-.00039	-.10914	-.14958	-.00000	

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BM7NA

(AFM043) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XMRP = 12.9310 INCHES  
 LREF = 7.8828 INCHES YMRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 21/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.67%	-.000069	.25618	.06063	-.03331	.03040	.00040	-.00002	21.14518	20.15326	7.81821
4.000	16.86%	-.000083	.37386	.05956	-.04145	.02056	.00047	.00003	17.33748	16.35555	7.81821
4.000	21.07%	-.000062	.52918	.08896	-.04921	.00057	.00030	-.00008	14.48170	14.48170	7.81821
4.000	26.38%	-.000051	.69695	.05837	-.06299	.00051	.00061	-.00026	11.62591	14.48170	7.81821
4.000	31.71%	-.000059	.93439	.05605	-.08436	.00104	.00036	.00026	11.62591	14.48170	7.81821
4.000	37.04%	.00109	1.12400	.05300	-.10886	.00093	.00072	-.00143	11.62591	11.62591	7.81821
GRADIENT		.000006	.03575	-.00029	-.00036	.00002	.00001	-.00004	-.38384	-.25670	.00000

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BM7NA

(AFM044) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XMRP = 12.9310 INCHES  
 LREF = 7.8828 INCHES YMRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 24/ 0 RN/L = 5.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.96%	-.00325	.26456	.06222	-.03322	.00041	.00040	.00007	29.71253	32.56351	12.57784
4.000	17.25%	-.00313	.38722	.05906	-.04095	.00051	.00044	.00078	23.04904	25.92482	11.62591
4.000	21.63%	-.00256	.52571	.05827	-.04931	.00047	.00047	.00055	22.09711	21.14516	11.62591
4.000	27.15%	-.00167	.71935	.05706	-.06445	.00058	.00053	.00022	15.43362	19.24133	11.62591
GRADIENT		.000010	.03211	-.00022	-.00019	.00001	.00001	-.00005	-.93624	-.95707	-.05852

REFERENCE DATA

(AFM045) ( 06 FEB 74 )

RUN NO. 24/ 0 RN/L = 5.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.000	12.96%	-.00325	.26456	.06222	-.03322	.00041	.00040	.00007	29.71253	32.56351	12.57784
4.000	17.25%	-.00313	.38722	.05906	-.04095	.00051	.00044	.00078	23.04904	25.92482	11.62591
4.000	21.63%	-.00256	.52571	.05827	-.04931	.00047	.00047	.00055	22.09711	21.14516	11.62591
4.000	27.15%	-.00167	.71935	.05706	-.06445	.00058	.00053	.00022	15.43362	19.24133	11.62591
GRADIENT		.000010	.03211	-.00022	-.00019	.00001	.00001	-.00005	-.93624	-.95707	-.05852

DATE 06 FEB 74

TABULATED SOURCE DATA LARC INPUT 1031

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MA-7, UPUT 1031, ROCKWELL PRR ORB. CONF. BUM4

(APMHD45) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 59.FT. XRP = 12.9510 INCHES  
 LREF = 7.8628 INCHES YRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 27 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.0000	12.433	-.00046	.23260	.05972	-.02571	-.00203	.00029	.00036	6.86626	7.81821	4.01050
4.0000	16.513	-.00062	.35546	.05921	-.00389	-.00034	.00019	.00142	6.86626	6.86626	4.01050
4.0000	20.577	-.00073	.49515	.05929	-.04369	.00019	.00013	.00178	5.91435	7.81821	4.01050
4.0000	25.631	-.00092	.67598	.05659	-.05876	-.00204	.00060	.00176	5.91435	6.86626	4.96243
4.0000	30.775	-.00121	.86657	.05462	-.07763	-.00344	.00136	.00175	5.91435	5.91435	4.01050
4.0000	35.913	.00024	1.07893	.05058	-.10164	-.00055	.00129	.00135	4.96243	5.91435	4.96243
GRADIENT		.00002	.03605	-.00138	-.00329	.00021	.00024	-.02277	-.07439	-.08176	.03495

MA-7, UPUT 1031, ROCKWELL PRR ORB. CONF. BUM4

(APMHD46) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 59.FT. XRP = 12.9510 INCHES  
 LREF = 7.8628 INCHES YRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 35 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.0000	12.416	-.00025	.29048	.05594	-.02317	-.00037	.00032	.00036	7.81821	7.81821	4.01050
4.0000	16.322	-.00029	.36767	.05523	-.03029	-.00036	.00074	.00343	6.86626	7.81821	4.01050
4.0000	20.617	-.00038	.50735	.05448	-.04095	-.00082	.00156	.00438	5.91435	6.86626	4.01050
4.0000	25.690	-.00028	.68699	.05242	-.05331	-.00173	.00281	.00292	4.96243	4.96243	4.01050
4.0000	30.777	-.00245	.86707	.05124	-.07335	-.00125	.00238	.00276	4.96243	4.96243	4.01050
4.0000	35.914	-.00163	1.03975	.04723	-.09737	-.00144	.00274	.00110	4.01050	4.96243	4.01050
GRADIENT		.00003	.03624	-.00235	-.00313	-.00294	.00011	-.00016	-.15385	-.14895	.00120

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPUT 1031

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MA-7, UPUT 1031, ROCKWELL PRR ORB. CONF. BM7M4

(APM427) ( 06 FEB 74 )

REFERENCE DATA

SUPER = .7245 50.FFT. XRP = 12.9510 INCHES  
LNUF = 7.8626 INCHES YRP = .0000 INCHES  
SNEF = 15.1152 INCHES ZRP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 22/ 0 RNL = 5.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CT	PB1	PB2	PB3
4.000	12.674	-.00150	.25225	.05850	-.03066	.00006	.00017	.00086	18.2894D	19.2413J	9.72206
4.000	16.908	-.000399	.37219	.05724	-.03787	-.00031	.00030	.00038	16.38555	16.38555	8.77013
4.000	21.069	-.00154	.50633	.05685	-.04596	.00006	.00034	.00077	12.57784	14.48170	9.72206
4.000	26.454	-.00135	.69426	.05605	-.06038	.00000	.00067	.00026	13.52977	14.48170	8.77013
4.000	31.720	-.00015	.90237	.05446	-.08168	.00039	.00049	-.00029	11.62291	11.62291	8.77013
4.000	37.130	.00195	1.12216	.05113	-.10856	.00024	.00126	-.00247	11.62291	11.62291	8.77013
	GRADIENT	.00011	.03558	.00028	-.00038	.00001	.00004	-.00011	-.29380	-.29380	-.033343

MA-7, UPUT 1031, ROCKWELL PRR ORB. CONF. BM7M4

(APM428) ( 06 FEB 74 )

REFERENCE DATA

SUPER = .7245 50.FFT. XRP = 12.9510 INCHES  
LNUF = 7.8626 INCHES YRP = .0000 INCHES  
SNEF = 15.1152 INCHES ZRP = 6.0000 INCHES  
SCALE = .0150

RUN NO. 23/ 0 RNL = 5.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CT	PB1	PB2	PB3
4.000	12.928	-.00410	.25686	.05793	-.03013	.00016	.00026	.00142	20.76660	32.56031	15.43362
4.000	17.267	-.00317	.36276	.05676	-.03734	.00037	.00030	.00103	22.09711	26.65675	14.48170
4.000	21.649	-.00267	.52072	.05597	-.04574	-.00032	.00041	.00077	20.19326	22.09711	14.48170
4.000	27.154	-.00145	.71339	.05484	-.06139	.00021	.00035	-.00013	21.14518	25.90482	14.48170
	GRADIENT	.00016	.03270	-.002121	-.000219	-.00001	-.00003	-.00011	-.50559	-.49579	-.05852

DATE 08 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031,ROCKWELL PRR ORB. CONF. BATTM

(APN029) ( 08 FEB 74 )

## REFERENCE DATA

**SUPER =** .7243 30.FFT. ZHGP = 12.9510 INCHES  
**LINF =** 7.8628 INCHES YHGP = .0000 INCHES  
**GRDP =** 15.1152 INCHES ZHGP = 6.0000 INCHES  
**SCALE =** .0150

RUN NO. 28/0 RVAL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CA	CLM	CBL	CIN	CY	PB1	PB2	PB3		
4.000	12.421	-.003119	.22129	.05180	-.01945	.001168	.001398	.000795	6.866228	7.81821	4.01050	
4.000	16.579	-.002985	.33838	.05105	-.02465	-.002098	.00272	-.00161	6.866228	6.866228	4.01050	
4.000	20.562	-.002940	.47833	.05079	-.03452	-.00295	.00412	-.002425	5.91435	5.91435	4.01050	
4.000	25.963	-.002912	.63983	.04915	-.04778	-.00362	.00495	-.00377	4.96243	4.96243	4.01050	
4.000	30.808	-.002886	.85721	.04758	-.06770	-.00232	.00322	-.00322	4.96243	4.96243	4.01050	
4.000	35.929	-.002859	1.08771	.04411	-.09162	-.00137	.00358	-.00147	4.96243	4.96243	4.01050	
	GRADIENT	.000002	.03613	-.002031	-.00307	.00001	.00004	-.00004	-.00006	-.12623	-.12623	4.01050

MA-7, UPNT 1031,ROCKWELL PRR ORB. CONF. BATTM

(APN030) ( 08 FEB 74 )

## REFERENCE DATA

**SUPER =** .7243 30.FFT. ZHGP = 12.9510 INCHES  
**LINF =** 7.8628 INCHES YHGP = .0000 INCHES  
**GRDP =** 15.1152 INCHES ZHGP = 6.0000 INCHES  
**SCALE =** .0150

RUN NO. 29/0 RVAL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CA	CLM	CBL	CIN	CY	PB1	PB2	PB3		
4.000	12.394	-.003046	.21624	.04916	-.01084	.00412	.00473	-.00525	6.866228	7.81821	4.01050	
4.000	16.900	-.002925	.33389	.04396	-.01775	-.00476	.00629	-.00767	6.866228	6.866228	4.01050	
4.000	20.540	-.002905	.46795	.04476	-.02655	-.00505	.00641	-.00594	4.96243	5.91435	4.01050	
4.000	25.676	-.002863	.65445	.04406	-.03934	-.00548	.00703	-.00746	4.96243	4.96243	4.01050	
4.000	30.764	-.002832	.84699	.04164	-.05986	-.01038	.00911	-.00911	4.01050	4.96243	4.01050	
4.000	35.809	-.002806	1.05762	.03795	-.08173	-.01252	.01322	-.00163	4.01050	4.96243	4.01050	
	GRADIENT	-.000004	.03596	-.002027	-.00301	.00009	-.00011	-.00011	-.000125	-.13625	-.12391	4.01050

NA-7, UPNT 1031, ROCKWELL PRR CRB. CONF. BNTHA

(APM051) (06 FEB 74)

## REFERENCE DATA

SQFT =	.7243 SQ.FT.	XHPP =	12.9510 INCHES
LHCF =	7.8628 INCHES	YHPP =	.0000 INCHES
BHCF =	15.1152 INCHES	ZHPP =	6.0000 INCHES
SCALE =	.0150	RUN NO.	33/ 0
		RNU/L =	1.00 GRADIENT INTERVAL = -5.00/ 5.00
MACH	ALPHA	BETA	CLW CBL CYN CTY PB1 PB2 PB3
4.0000	12.469	-2.51273	.23333 .04571 -.01192 -.00227 .02354 8.77033 9.72206 4.01050
4.0000	16.559	-2.51271	.35037 .04463 -.01707 -.00219 .02130 9.72216 9.72206 4.01050
4.0000	20.657	-2.51261	.49029 .04380 -.02581 -.00305 .01871 8.77033 8.77013 4.01050
4.0000	23.696	-2.51261	.67061 .04323 -.04010 -.00234 .01867 6.86628 6.86628 4.01050
4.0000	30.793	-2.51260	.86309 .03151 -.05879 .00366 .02214 4.96243 4.96243 4.01050
4.0000	35.875	-2.51162	1.07353 .03851 -.08273 .00193 .02076 4.01050 4.96243 4.01050
	GRADIENT	.00003	.03632 -.000328 -.000319 .000019 -.000062 -.000062 -.000062 -.000062 -.000062

NA-7, UPNT 1031, ROCKWELL PRR CRB. CONF. BNTHA

(APM052) (06 FEB 74)

## REFERENCE DATA

SQFT =	.7243 SQ.FT.	XHPP =	12.9510 INCHES
LHCF =	7.8628 INCHES	YHPP =	.0000 INCHES
BHCF =	15.1152 INCHES	ZHPP =	6.0000 INCHES
SCALE =	.0150	RUN NO.	32/ 0
		RNU/L =	1.00 GRADIENT INTERVAL = -5.00/ 5.00
MACH	ALPHA	BETA	CLW CBL CYN CTY PB1 PB2 PB3
4.0000	12.478	-5.03997	.23273 .04603 -.01185 -.00121 .00862 .04671 10.67399 10.67399 4.01050
4.0000	16.691	-5.04009	.35526 .04519 -.01803 -.00045 .00979 .0597 10.67399 10.67399 4.01050
4.0000	20.732	-5.03972	.49494 .04539 -.02781 -.00008 .01211 .04224 10.67399 9.72206 4.01050
4.0000	23.747	-5.03944	.66343 .04340 -.03865 .00163 .01247 .04132 7.81821 6.86628 4.01050
4.0000	30.768	-5.03910	.85616 .04269 -.05740 .00425 .01176 .04176 6.86628 5.91435 4.01050
4.0000	35.897	-5.03896	1.07212 .03939 -.08239 .00596 .01123 .04040 5.91435 4.96243 4.01050
	GRADIENT	.00007	.03580 -.00026 -.00026 .00011 -.00027 -.00027 -.00027 -.00027 -.00027

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UNIT 1031

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RA-7, UNIT 1031, ROCKWELL PRR ORB. CONF. BLMN

(APM033) ( 06 FEB 74 )

REFERENCE DATA

SPDF =	.7645 SR.FT.	XREF =	12.9510 INCHES
LREF =	7.0028 INCHES	YREF =	.0000 INCHES
SREF =	15.1132 INCHES	ZREF =	.0000 INCHES
SCALE =	.0150		

RUN NO. SD/ O RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CH	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.0000	32.655	-.00310	.29554	.05123	-.02323	-.00106	.00245	.00162	16.26940	20.19326	.72206
4.0000	16.879	-.00237	.36374	.05024	-.02995	-.00205	.00172	-.00241	17.33746	19.24133	9.72206
4.0000	21.579	-.00245	.49757	.04843	-.03637	-.00398	.00363	-.00296	15.43362	14.48170	10.67399
4.0000	26.403	-.00219	.69772	.04635	-.05126	-.00391	.00470	-.00453	11.62591	12.57784	10.67399
4.0000	31.733	-.00268	.89167	.04695	-.07154	-.00265	.00357	-.00261	10.67399	11.62591	10.67399
4.0000	37.047	-.00210	1.12949	.04456	-.09566	-.00237	.00335	-.00275	10.67399	11.62591	9.72206
GRADIENT	.00003	.03555	-.00265	-.00295	-.00035	.00012	-.00017	-.35785	-.38625	.01421	

RA-7, UNIT 1031, ROCKWELL PRR ORB. CONF. BLMN

(APM034) ( 06 FEB 74 )

REFERENCE DATA

SPDF =	.7645 SR.FT.	XREF =	12.9510 INCHES
LREF =	7.0028 INCHES	YREF =	.0000 INCHES
SREF =	15.1132 INCHES	ZREF =	.0000 INCHES
SCALE =	.0150		

RUN NO. SD/ O RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CH	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3
4.0000	12.466	-.00022	.20026	.03380	.00426	-.00680	.01114	-.01433	6.86626	7.81621	4.01050
4.0000	16.341	-.00026	.32315	.03395	-.00396	-.05757	.01170	-.01525	6.86628	6.86628	4.01050
4.0000	21.807	-.00124	.46285	.03409	-.01163	-.03683	.01026	-.01366	4.96243	4.96243	4.01050
4.0000	25.894	-.00219	.65475	.03445	-.02726	-.03650	.00739	-.00484	4.01050	4.96243	4.01050
4.0000	30.917	-.00249	.85295	.03184	-.04711	-.03449	.00461	-.00240	4.01050	4.96243	4.01050
4.0000	35.996	-.00179	1.05015	.02895	-.07204	-.03421	.01694	-.00193	4.01050	4.96243	4.01050
GRADIENT	-.03009	.03680	-.00519	-.00315	.00022	-.00033	.00058	-.14136	-.11651	.01421	

MA-7, UPNT 1031, ROCKWELL PRB ORB. CONF. BATTNAU

(APM055) (06 FEB 74)

## REFERENCE DATA

SHFT = .7249 50.0 FT. DREF = 12.9510 INCHES  
 LINP = 7.8626 INCHES TRIP = .0000 INCHES  
 GRDP = 15.1152 INCHES ZREF = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 41 / 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLK	CBL	CYN	CT	PB1	PB2	PB3
2.500	-1.195	.00122	.01901	.06734	-.00007	.00039	-.00105	105.36210	129.118028	53.97804	
2.500	4.035	.00341	.10837	.06403	-.02567	-.00001	-.00134	101.57479	110.14174	56.83383	
2.500	6.440	.00446	.23673	.06102	-.04220	.00028	-.00232	85.39164	93.00705	52.0719	
2.500	12.665	.00459	.36271	.05621	-.05621	.00029	-.00257	58.73768	79.68007	45.4070	
2.500	16.992	.00404	.50134	.07443	-.07163	.00039	-.00246	43.50685	65.40117	37.79329	
2.500	21.468	.00328	.65425	.07069	-.08642	.00125	-.00055	31.13169	52.07419	36.84336	
GRADIENT	.00052	.02950	-.00076	-.00097	.00001	-.00007	-.00012	-.8993	-4.47566	.67195	

RUN NO. 43 / 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLK	CBL	CYN	CT	PB1	PB2	PB3
2.500	-21.4	.00021	-.02015	.01982	-.01202	.00026	-.00040	72.06166	83.48778	28.27602	
2.500	4.008	.00175	.06720	.07705	-.02474	.00027	-.00104	72.06486	71.11273	29.22794	
2.500	6.273	.00166	.20482	.07472	-.05566	.00028	-.00141	53.97804	57.78575	26.37216	
2.500	12.509	.00193	.32320	.03180	-.04651	.00041	-.00160	35.89143	49.26648	23.51639	
2.500	18.742	.00209	.45555	.06948	-.06143	.00039	-.00121	23.51638	38.74721	18.75675	
2.500	21.032	.00144	.59624	.06852	-.07348	.00157	-.00105	18.75675	31.13180	19.714867	
GRADIENT	.00036	.02544	-.00066	-.00301	.00000	-.00000	-.00015	.00000	-2.93248	.22557	

DATE 08 FEB 74

TABULATED SOURCE DATA LARC UNIT 1031

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NA-7, UNIT 1031, ROCKWELL PRR ORB. CONF.

(APM051) (08 FEB 74)

## REFERENCE DATA

RND = .7243 30.57°. RNDP = 12.9510 INCHES  
 LNDP = 7.0000 INCHES RNDP = .00000 INCHES  
 GRDP = 15.1152 INCHES RNDP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 44/0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

	BETA	CA	CLM	CBL	CIN	CY	PB1	PB2	PB3
MACH	.0000	.02444	.07777	.00005	.00014	.00029	.71.11273	.64.43971	.50.17987
2.950	-.203	-.00078	.09030	.00007	.00025	.00039	.72.06466	.70.16000	.51.13160
2.950	4.190	.00056	.07475	-.02233	.00002	.00034	.55.00190	.57.78575	.29.22794
2.950	8.285	.00076	.07273	-.03205	.00017	.00034	.35.09143	.47.31456	.26.37216
2.950	12.476	.00186	.06953	.04319	.00026	.00162	.24.46831	.39.69914	.23.51636
2.950	16.666	.00219	.06692	.05677	.00017	.00028	.21.66065	.33.98756	.23.51636
2.950	21.856	.00246	.06412	.06875	-.00216	.00039	.21.377	-.3.20656	.21.377
GRADIENT	.00031	.02577	-.02368	.00000	.00002	.00015			

NA-7, UNIT 1031, ROCKWELL PRR ORB. CONF.

(APM051) (08 FEB 74)

## REFERENCE DATA

RND = .7243 30.57°. RNDP = 12.9510 INCHES  
 LNDP = 7.0000 INCHES RNDP = .00000 INCHES  
 GRDP = 15.1152 INCHES RNDP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 42/0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

	BETA	CA	CLM	CBL	CIN	CY	PB1	PB2	PB3
MACH	.0000	.08507	-.00567	-.00017	.00026	.00138	.104.47016	.126.22035	.56.03303
2.950	-.165	-.00222	-.08151	.00022	.00011	.00159	.101.57439	.109.16981	.56.03303
2.950	4.373	.00390	.10457	-.02375	.00024	.00235	.66.24742	.93.00705	.50.17034
2.950	8.357	.00454	.07940	-.01926	.00011	.00241	.59.68961	.79.68007	.46.36263
2.950	12.656	.00412	.06055	.05315	-.00024	.00226	.43.51065	.65.45117	.42.55492
2.950	16.977	.00393	.05253	.07214	-.00839	.00167	.32.00832	.59.68961	.42.55492
2.950	21.291	.00367	.04442	.06637	-.06116	.00043	-.00005	-.67116	-.47439
GRADIENT	.00030	.03010	-.00174	-.00008	-.00001	-.00004			

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TABULATED SOURCE DATA LARC UPNT :0331

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTM40

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(APM030) (06 FEB 74)

REFERENCE DATA

SIDP = .7245 SL.FT. XREF = 12.9910 INCHES  
LUDF = 7.0020 INCHES YREF = .2930 INCHES  
BDFP = 15.1132 INCHES ZREF = 6.0000 INCHES  
SCALE = .0150

RUN NO. 45/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLW	CDL	CYN	CY	PB1	PB2	PB3
4.0000	12.405	-.000365	.23884	.06145	-.03973	.00048	.00053	.00053	5.42977	7.33362	3.52291
4.0000	16.515	-.000322	.36014	.59346	-.03712	.00052	.00069	-.00095	5.42977	6.38170	2.57399
4.0000	20.538	-.000332	.49695	.06054	-.04727	.00073	.00057	.00026	4.47784	6.38170	2.57399
4.0000	23.713	-.000337	.67603	.05895	-.06072	.00049	.00076	-.00027	4.47784	6.38170	2.57399
4.0000	30.788	-.000314	.87645	.05796	-.08260	.00100	.00066	-.00116	4.47784	6.38170	2.57399
4.0000	35.930	-.000310	1.06899	.05451	-.10472	.00134	.00096	-.00248	3.52291	5.42977	3.52291
GRADIENT		.00002	.03627	-.00327	-.00317	.00002	.00001	-.00029	-.07430	-.05702	.00253

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTM40

REFERENCE DATA

SIDP = .7245 SL.FT. XREF = 12.9910 INCHES  
LUDF = 7.0020 INCHES YREF = .2930 INCHES  
BDFP = 15.1132 INCHES ZREF = 6.0000 INCHES  
SCALE = .0150

RUN NO. 45/0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLW	CDL	CYN	CY	PB1	PB2	PB3
4.0000	12.472	-.000343	.23423	.06040	-.03350	.00041	.00034	-.00029	17.80482	18.73675	7.33362
4.0000	16.915	-.000309	.37392	.59561	-.04160	.00043	.00034	-.00060	14.94934	15.90096	7.33362
4.0000	21.073	-.000307	.50362	.05896	-.04930	.00051	.00050	-.00064	13.04518	13.99711	7.33362
4.0000	26.921	-.000304	.69466	.05827	-.06366	.00053	.00054	-.00130	9.23746	13.99711	7.33362
4.0000	31.713	-.000303	.89736	.05642	-.08401	.00100	.00124	-.00124	9.23748	13.99711	7.33362
4.0000	37.108	-.000313	1.11540	.05350	-.10847	.00091	.00094	-.01330	11.14133	11.14133	7.33362
GRADIENT		.000010	.03536	-.00026	-.00013	.00002	.00001	-.00010	-.30743	-.25921	.00270

PARAMETRIC DATA

BETA = .000  
RNL = 1.000  
PO-JET = .000

PARAMETRIC DATA

BETA = .000  
RNL = 3.000  
PO-JET = .000



DATE 06 FEB 74

TABULATED SOURCE DATA LARC INPUT 1031

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MA-7,INPUT 1031,ROCKWELL PRR ORB. CONF. BWTN40

(APM002) ( DS FEB 74 )

## REFERENCE DATA

SREF = -7245 SQ.FT. XRP = 12.9510 INCHES  
 LREF = 7.0628 INCHES YRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 46/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CBL	CYN	CR	PB1	PB2	PB3
4.000	12.671	-.00040	.29246	.05837	-.03024	.00017	.00035	-.00032	16.85289	18.75675	7.33362
4.000	16.662	-.00046	.36771	.05742	-.03784	.00002	.00042	-.00039	14.94904	15.90096	8.28555
4.000	21.082	-.00027	.49994	.05690	-.04598	.00001	.00039	-.00025	12.09326	13.99711	8.28555
4.000	26.412	.00002	.68339	.05627	-.06007	.00003	.00064	-.00035	12.09326	13.99711	7.33362
4.000	31.717	.000362	.86776	.05436	-.08060	.00044	.00045	-.00129	11.14133	11.14133	8.28555
4.000	37.043	.00140	1.10783	.05177	-.10570	.00003	.00101	-.00287	10.18940	11.14133	8.28555
GRADIENT	.000007	.00325	-.00025	.00305	.00001	.00002	-.00010	-.025523	-.30299	.02142	

MA-7,INPUT 1031,ROCKWELL PRR ORB. CONF. BWTN40

(APM003) ( DS FEB 74 )

## REFERENCE DATA

SREF = -7245 SQ.FT. XRP = 12.9510 INCHES  
 LREF = 7.0628 INCHES YRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 50/ 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLN	CBL	CYN	CR	PB1	PB2	PB3
4.000	12.396	-.00112	.22767	.05252	-.01871	-.00099	.00041	.00149	5.42977	7.33362	2.57399
4.000	16.670	-.00096	.34501	.05151	-.02294	-.00119	.00099	.00025	5.42977	7.33362	3.52591
4.000	20.542	-.00075	.47453	.05152	-.03505	-.00142	.00145	-.00019	4.47784	5.42977	3.52591
4.000	25.795	-.00030	.65954	.05143	-.04781	-.00168	.00167	-.00043	4.47784	5.42977	2.57399
4.000	30.752	-.00029	.85461	.04974	-.06856	-.00295	.00297	-.00001	2.57399	5.42977	2.57399
4.000	35.726	-.00091	1.05540	.04630	-.09034	-.00467	.00413	-.00113	2.57399	5.42977	2.57399
GRADIENT	.000003	.03578	-.00023	.00006	.00001	.00003	-.00008	-.13965	-.08985	-.02484	

DATE 08 FEB 74

## TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BN-140

(APM064) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XHYP = 12.9510 INCHES  
 LREF = 7.0026 INCHES YHYP = .0000 INCHES  
 SREF = 15.1152 INCHES ZHYP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 51 / 0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CT	PB1	PB2	PB3
4.000	12.304	-.00177	.21631	.04755	-.01067	-.00199	.00049	.00277	5.42977	6.28555	2.57399
4.000	16.312	-.00261	.35772	.04705	-.01899	-.00186	.00157	-.00126	5.42977	7.33392	2.57399
4.000	20.659	-.00295	.47442	.04562	-.02910	-.00213	.00188	-.00031	4.47784	6.38170	2.57399
4.000	25.667	-.00312	.65407	.04589	-.04267	-.00263	.00230	-.00031	3.52591	5.42977	2.57399
4.000	30.775	-.00212	.84844	.04341	-.06148	-.00174	.00091	.00269	2.57399	4.47784	2.57399
4.000	35.947	-.00154	1.06356	.04158	-.08556	-.00142	.00136	.00004	2.57399	4.47784	3.52591
GRADIENT	-	.00002	.03592	-.00265	-.00313	.00032	.00011	-.00001	-.14355	-.17286	.02978

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BN/TNAC

(APM065) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 SQ.FT. XHYP = 12.9510 INCHES  
 LREF = 7.0026 INCHES YHYP = .0000 INCHES  
 SREF = 15.1152 INCHES ZHYP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 47 / 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CT	PB1	PB2	PB3
4.000	12.649	-.00136	.24121	.05171	-.02248	-.00381	.00027	.00047	16.83299	18.75675	6.28555
4.000	16.920	-.00263	.35951	.05061	-.02949	-.00131	.00033	.00128	15.90796	18.75675	6.28555
4.000	21.046	-.00169	.48703	.14951	-.03627	-.00169	.00134	-.00052	13.99711	14.94904	9.23748
4.000	26.409	-.00172	.67451	.04935	-.05078	-.00227	.00181	-.00118	10.18940	10.18940	9.23748
4.000	31.714	-.00242	.87675	.04766	-.07128	-.00142	.00119	-.00013	8.26555	10.18940	9.23748
4.000	37.078	-.00246	1.09869	.04510	-.09611	-.00118	.00111	-.00026	9.23748	11.14133	8.26555
GRADIENT	-	.00003	.03520	-.00264	-.00299	-.00001	.00004	-.00005	-.37416	-.39295	.01409

DATE 08 FEB 74

TABULATED SOURCE DATA LARC UWT 1031

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MA-7, UWT 1031, ROCKWELL PRR ORB. CONF.

(APM086) (08 FEB 74)

## REFERENCE DATA

SREF =	.7245 SQ. FT.	XHFP =	12.9510 INCHES
LREF =	7.8828 INCHES	YHFP =	.0000 INCHES
BREF =	15.1152 INCHES	ZHFP =	.0000 INCHES
SCALE =	.0150		

RUN NO. 52/0 RN/L = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLH	CBL	CYN	CT	PB1	PB2	PB3
4.0000	12.405	-.00250	.20535	.03734	.00329	-.00341	.00176	.00256	5.42977	7.33362	2.57399
4.1000	16.513	-.00246	.32672	.03582	-.00498	-.00336	.00257	.00135	5.42977	6.38170	2.57399
4.2000	20.324	-.00255	.45783	.03540	-.01408	-.00387	.00246	.00226	3.52291	5.42977	2.57399
4.3000	25.682	-.00314	.64895	.03508	-.02981	-.00414	.00254	.00345	2.57399	5.42977	2.57399
4.4000	30.768	-.00315	.84311	.03455	-.04866	-.00296	.00163	.00391	2.57399	4.47784	2.57399
4.5000	35.909	-.00250	1.06125	.03182	-.07193	-.00312	.00210	.00112	2.57399	4.47784	2.57399
	GRADIENT	-.000302	.03650	-.00219	-.00318	-.00032	-.00201	-.00021	-.14114	-.11689	-.00000

## PARAMETRIC DATA

BETA =	.000	PO-JET =	600.000
RN/L =	1.000		

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPT 1031

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MA-7, UPMT 1031, ROCKWELL PRR CRB. CONF.

(APM067) (06 FEB 74)

## REFERENCE DATA

SREF =	.7245 SQ.FT.	XHYP =	12.9310 INCHES
LRE =	7.8828 INCHES	YHYP =	.0000 INCHES
BREY =	19.1192 INCHES	ZHYP =	.0000 INCHES
SCALE =	.0193		

RUN NO. 63/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CT	PB1	PB2	PB3
2.500	-.087	.00111	-.01352	.08676	-.00969	.00035	.00023	-.00063	103.55715	129.25918	51.20117
2.500	4.293	.03280	.11603	.08380	-.02747	.00015	.00015	-.00152	95.94174	110.22064	54.05695
2.500	6.565	.03313	.24460	.08095	-.04323	.00037	.00027	-.00171	80.71091	94.99981	49.29732
2.500	12.716	.03393	.36973	.07754	-.05750	.00038	.00026	-.00193	56.91273	81.66283	41.68190
2.500	17.013	.03317	.50734	.07438	-.07232	.00053	.00037	-.00172	41.68197	67.35393	35.97034
2.500	21.256	.03261	.65409	.07102	-.08637	.00050	.00031	-.00237	30.25877	54.05695	35.01641
GRADIENT	.03039	.03033	.03068	.03046	-.03003	-.05002	-.00016	-1.73868	-4.34670	.65200	

RUN NO. 65/ 0 RN/L = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CBL	CYN	CT	PB1	PB2	PB3
2.950	-.213	-.00106	-.01988	.07979	-.01292	.00024	.00025	.00023	71.19164	84.51861	27.40299
2.950	4.097	.00038	.09132	.07695	-.02511	.00026	.00033	-.00064	70.23971	71.19164	28.35492
2.950	8.226	.00111	.23455	.07459	-.03551	.00039	.00043	-.00103	52.15310	58.81638	25.9914
2.950	12.572	.00293	.32622	.07162	-.04705	.00058	.00028	-.00106	36.92226	49.29732	21.69143
2.950	16.762	.00217	.45660	.06929	-.06057	.00059	.00042	-.00141	27.40299	41.68191	18.83565
2.950	21.016	.00383	.59767	.06632	-.07389	.00074	.00058	-.00264	19.78759	33.11456	17.88372
GRADIENT	.02033	.02033	.02065	.02046	-.02003	.00012	-.00020	-.22087	-3.09210	.22087	

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

PAGE 00

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTH41

(AFM068) ( 06 FEB 74 )

## REFERENCE DATA

SREF =	.7245 SQ.FT.	XHFP =	12.9510 INCHES
LREF =	7.8620 INCHES	YHFP =	.0000 INCHES
BREF =	15.1132 INCHES	ZHFP =	6.0000 INCHES
SCALE =	.0150		

RUN NO.	64/0	RNL =	3.00	GRADIENT INTERVAL =	-5.00/ 5.00						
MACH	ALPHA	BETA	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3	
2.950	-.2036	-.00336	-.02136	.07923	-.01261	.00025	.00023	-.00011	.70.23971	64.51061	27.40299
2.950	4.032	.002950	.038987	.07692	-.02532	.00025	.00028	-.00063	.70.23971	71.19164	27.40299
2.950	8.219	.00127	.02460	.07461	-.03552	.00033	.00036	-.00105	.51.20117	56.81658	22.64336
2.950	12.471	.00303	.032349	.07142	-.04652	.00054	.00055	-.00176	.35.01841	48.34539	21.69143
2.950	16.732	.00245	.04630	.06884	-.06051	.00089	.00092	-.00141	.24.54721	39.77804	17.88372
2.950	21.073	.00342	.05969	.06598	-.07372	.00073	.00050	-.00230	.17.88372	31.21070	19.78756
2.950	GRADIENT	.00023	.02611	-.00754	-.02298	.00000	.00001	-.00012	-.00010	-.3.12840	-.00000

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTH41

(AFM069) ( 06 FEB 74 )

## REFERENCE DATA

SREF =	.7245 SQ.FT.	XHFP =	12.9510 INCHES
LREF =	7.8620 INCHES	YHFP =	.0000 INCHES
BREF =	15.1132 INCHES	ZHFP =	6.0000 INCHES
SCALE =	.0150		

RUN NO.	64/0	RNL =	3.00	GRADIENT INTERVAL =	-5.00/ 5.00						
MACH	ALPHA	BETA	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3	
2.900	-.163	.01000	-.01460	.08336	-.00944	-.00038	.00028	-.00084	.102.60523	129.25918	52.13310
2.900	4.097	.00272	.11394	.08392	-.02672	.00020	.00014	-.00148	95.94174	111.17257	53.10902
2.900	8.356	.00392	.23915	.08121	-.04266	.00032	.00020	-.00201	81.66283	94.98981	46.44153
2.900	12.656	.00447	.36812	.07733	-.05720	.00044	.00028	-.00219	56.91273	81.66283	41.68190
2.900	17.062	.00324	.51132	.07400	-.07260	.00048	.00038	-.00177	42.63383	66.43200	36.92226
2.900	21.363	.00325	.65798	.07070	-.08667	.00044	.00034	-.00210	30.25877	53.10502	36.92226
2.900	GRADIENT	.00040	.03038	-.00057	-.10404	.00007	-.00003	-.00015	-1.55689	-4.22584	.22241

PARAMETRIC DATA

SREF =	.000	PO-JET =	185.000
RNL =	3.000		

RUN NO.	64/0	RNL =	3.00	GRADIENT INTERVAL =	-5.00/ 5.00
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RUN NO.	64/0	RNL =	3.00	GRADIENT INTERVAL =	-5.00/ 5.00						
MACH	ALPHA	BETA	CA	CLM	CBL	CYN	CY	PB1	PB2	PB3	
2.900	-.163	.01000	-.01460	.08336	-.00944	-.00038	.00028	-.00084	.102.60523	129.25918	52.13310
2.900	4.097	.00272	.11394	.08392	-.02672	.00020	.00014	-.00148	95.94174	111.17257	53.10902
2.900	8.356	.00392	.23915	.08121	-.04266	.00032	.00020	-.00201	81.66283	94.98981	46.44153
2.900	12.656	.00447	.36812	.07733	-.05720	.00044	.00028	-.00219	56.91273	81.66283	41.68190
2.900	17.062	.00324	.51132	.07400	-.07260	.00048	.00038	-.00177	42.63383	66.43200	36.92226
2.900	21.363	.00325	.65798	.07070	-.08667	.00044	.00034	-.00210	30.25877	53.10502	36.92226
2.900	GRADIENT	.00040	.03038	-.00057	-.10404	.00007	-.00003	-.00015	-1.55689	-4.22584	.22241

RUN NO.	64/0	RNL =	3.00	GRADIENT INTERVAL =	-5.00/ 5.00
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PARAMETRIC DATA

DATE 06 FEB 74

TABULATED SOURCE DATA LARC UPTIT 1031

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MA-7, UPTIT 1031, ROCKWELL PAR ORB. CONF. BUMA1

(APPHOT) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 SL-FT.  
 LREF = 7.6628 INCHES  
 BREF = 15.1152 INCHES  
 SCALE = .0150

RUN NO. 57 / 0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CA	CLW	CBL	CTN	CV	PB1	PB2	PB3
4.0000	12.432	-.00173	.25046	.00319	-.02264	.00011	.00006	.00480	6.36443	2.63269
4.0000	16.511	-.00132	.37550	.06236	-.05763	.00038	.00021	.00388	7.41253	2.63269
4.0000	21.595	-.00143	.51200	.06260	-.04848	.00063	.00022	.00359	6.46960	7.41253
4.0000	25.682	-.00152	.66751	.05966	-.06069	.00064	.00044	.00323	5.52067	7.41253
4.0000	30.718	-.00129	.88704	.05795	-.06165	.00112	.00022	.00317	5.52067	6.46960
4.0000	35.822	-.00066	1.05723	.05422	-.10318	.00093	.00056	.00193	4.55675	5.52067
GRADIENT		.00003	.03612	-.00057	-.00313	.00024	.00002	-.15403	-.10442	.00000

MA-7, UPTIT 1031, ROCKWELL PAR ORB. CONF. BUMA1

(APPHOT) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 SL-FT.  
 LREF = 7.6628 INCHES  
 BREF = 15.1152 INCHES  
 SCALE = .0150

RUN NO. 54 / 0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

	ALPHA	BETA	CA	CLW	CBL	CTN	CV	PB1	PB2	PB3
4.0000	12.669	-.00197	.25037	.06309	-.03398	.00049	.00130	17.88372	19.78752	7.41253
4.0000	16.915	-.00150	.38009	.05863	-.04097	.00063	.00051	15.97937	15.97937	7.41253
4.0000	21.034	-.00190	.51144	.05904	-.04682	.00082	.00048	.00097	14.07602	15.92794
4.0000	26.460	-.00131	.70311	.05947	-.05359	.00072	.00059	.00135	15.26831	14.07602
4.0000	31.727	-.00070	.90313	.05645	-.06369	.00120	.00036	.00227	11.22024	14.07602
4.0000	37.042	.00020	1.12468	.05335	-.10942	.00116	.00036	.00092	12.17216	11.22024
GRADIENT		.00008	.03566	-.00026	-.00306	.00003	.00001	-.00008	-.26919	.00000

NA-7, INPUT 1031, RODMELL PRR ORB. CONF. BMTN41

(APM072) ( 06 FEB 74 )

## REFERENCE DATA

SREF =	.7245 50.FT.	XREF =	12.9510 INCHES
LREF =	7.6020 INCHES	YREF =	.0000 INCHES
BREF =	15.1152 INCHES	ZREF =	6.0000 INCHES
SCALE =	.0150		

RUN NO. 58/0 RVAL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

NUCH	ALPHA	BETA	CH	CA	CLW	CLL	CTN	CY	PB1	PB2	PB3
4.000	12.309	-.00177	.24455	.08171	-.02934	.00035	.00007	.00490	7.41253	7.41253	1.73036
4.000	16.499	-.00134	.36761	.06130	-.03686	.00358	.00260	.00393	7.41253	7.41253	2.65269
4.000	20.582	-.00145	.50710	.06157	-.04733	.00262	.00261	.00364	4.55675	7.41253	2.65269
4.000	25.700	-.00120	.69332	.06020	-.06163	.00364	.00345	.00316	5.50867	7.41253	2.65269
4.000	30.832	-.00067	.89292	.05771	-.08103	.00392	.00337	.00167	5.50867	6.469260	2.65269
4.000	35.867	-.00091	1.09738	.05393	-.10900	.00369	.00101	.00147	4.55675	6.469260	1.73036
	GRADIENT	.00004	.05647	-.20032	-.021316	.00032	.00035	-.00015	-.11144	-.04704	-.00237

NA-7, INPUT 1031, RODMELL PRR ORB. CONF. BMTN41

(APM073) ( 06 FEB 74 )

## REFERENCE DATA

SREF =	.7245 50.FT.	XREF =	12.9510 INCHES
LREF =	7.6020 INCHES	YREF =	.0000 INCHES
BREF =	15.1152 INCHES	ZREF =	6.0000 INCHES
SCALE =	.0150		

RUN NO. 58/0 RVAL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

NUCH	ALPHA	BETA	CH	CA	CLW	CLL	CTN	CY	PB1	PB2	PB3
4.000	12.409	-.00177	.24452	.08163	-.02933	.00035	.00007	.00491	7.41253	7.41253	1.73036
4.000	16.499	-.00134	.36748	.06127	-.03683	.00358	.00263	.00393	6.469260	7.41253	1.73036
4.000	20.582	-.00157	.50802	.06094	-.04729	.00359	.00263	.00360	5.50867	7.41253	1.73036
4.000	25.673	-.00063	.89746	.05975	-.08073	.00373	.00265	.00106	5.50867	7.41253	2.65269
4.000	30.701	-.00021	.89753	.05792	-.10186	.00380	.00265	.00021	5.50867	6.469260	1.73036
4.000	35.911	-.00009	1.09750	.05424	-.13124	.00380	.00214	.00139	5.50867	6.469260	1.73036
	GRADIENT	.00007	.05399	-.20030	-.021314	.00031	.00039	-.00029	-.07190	-.04711	.00494

DATE 06 FEB 74

## TABULATED SOURCE DATA LARC UPNT 1031

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MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTN41

(APM074) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 50.FT. XMRP = 12.9510 INCHES  
 LREF = 7.8026 INCHES YMRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 55/0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.682	-.00182	.26034	.06071	-.03345	.00045	.00033	.00126	17.88372	19.78756	7.41253
4.000	16.866	-.00192	.36014	.05931	-.04087	.00033	.00140	.00126	16.93180	16.93160	7.41253
4.000	21.077	-.00131	.51341	.05890	-.04918	.00034	.00053	.00049	14.07602	15.02794	7.41253
4.000	26.394	-.00131	.69923	.05839	-.06322	.00064	.00059	.00035	10.26831	15.02794	6.46360
4.000	31.705	-.00070	.90516	.05631	-.08358	.00120	.00036	.00027	11.22024	13.12109	7.41253
4.000	37.039	.00097	1.12297	.05334	-.10936	.00095	.00112	.00168	12.17216	11.22024	7.41253
4.000	GRADIENT	.00010	.03553	-.00288	-.03303	.00035	.00032	-.00011	-.28160	-.31295	-.593473

MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BMTN41

(APM075) ( 06 FEB 74 )

## REFERENCE DATA

SREF = .7245 50.FT. XMRP = 12.9510 INCHES  
 LREF = 7.8026 INCHES YMRP = .0000 INCHES  
 BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
 SCALE = .0150

RUN NO. 60/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

MACH	ALPHA	BETA	CN	CA	CLM	CLL	CYN	CY	PB1	PB2	PB3
4.000	12.409	-.00114	.24451	.06101	-.02991	.00004	.00120	.00214	7.41253	7.41253	1.70296
4.000	16.499	-.00107	.36773	.06008	-.03665	-.00048	.00196	.00099	6.46060	7.41253	1.70296
4.000	20.562	-.00096	.50716	.06045	-.04735	-.00087	.00277	.00077	4.55675	7.41253	1.70296
4.000	25.684	-.00069	.69767	.05998	-.06063	-.00132	.00358	-.00272	5.59867	7.41253	1.70296
4.000	30.772	-.00046	.86860	.05758	-.06169	-.00241	.00257	-.00129	5.59867	6.46060	1.70296
4.000	35.887	.00006	1.09728	.05373	-.10513	-.00003	.00271	-.00287	5.59867	5.59867	1.70296
4.000	GRADIENT	.00005	.03639	-.00288	-.00320	-.00000	.00006	-.00020	-.06445	-.07690	.00000

## PARAMETRIC DATA

RNL	BETA										
	= .000		= .000		= .000		= .000		= .000		= .000
	= 3.000		= 3.000		= 3.000		= 3.000		= 3.000		= 3.000

## PARAMETRIC DATA

RNL	BETA										
	= 1.000		= 1.000		= 1.000		= 1.000		= 1.000		= 1.000
	= 1.000		= 1.000		= 1.000		= 1.000		= 1.000		= 1.000

MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF. #17NA1  
(APM076) (08 FEB 74)

## REFERENCE DATA

SREF = .7245 SQ.FT. XMRP = 12.9510 INCHES  
LREF = 7.8826 INCHES YMRP = .0000 INCHES  
BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
SCALE = .0150

## PARAMETRIC DATA

BETA = .0000  
RNL = 1.0000

RUN NO. 61/0 RNL = 1.00 GRADIENT INTERVAL = -5.00/ 5.00

	CLM	CBL	CYN	CP1	PB2	PB3
MACH	.24475	-.06226	-.00133	-.00376	-.41253	6.48060
ALPHA	-.00066	.06798	-.00197	.00510	-.00486	2.65289
4.0000	12.418	-.00029	-.03673	-.00220	.00534	7.41253
4.0000	16.519	.36783	.06034	-.04746	.00220	5.50267
4.0000	20.562	-.00249	.95752	-.06386	.00549	4.55675
4.0000	25.652	.00214	.68758	-.05970	-.00214	7.41253
4.0000	30.760	-.00092	.88113	.05748	-.00104	4.55675
4.0000	35.934	-.00022	1.09700	.05346	-.00013	6.48060
GRADIENT	.00002	-.00626	-.00326	.00096	-.00005	1.70796
					-.14112	-.04974

MA-7, UPWT 1031, ROCKWELL PRR ORB. CONF. #17NA1  
(APM077) (08 FEB 74)

## REFERENCE DATA

SREF = .7245 SQ.FT. XMRP = 12.9510 INCHES  
LREF = 7.8826 INCHES YMRP = .0000 INCHES  
BREF = 15.1152 INCHES ZMRP = 6.0000 INCHES  
SCALE = .0150

## PARAMETRIC DATA

BETA = .0000  
RNL = 1.0000

RUN NO. 56/0 RNL = 3.00 GRADIENT INTERVAL = -5.00/ 5.00

	CLM	CBL	CYN	CP1	PB2	PB3
MACH	.25798	-.05366	-.00299	.00051	.00081	17.88372
ALPHA	-.00132	.37825	.05868	-.00002	.00175	16.93180
4.0000	16.693	-.00041	-.51169	-.04113	-.00161	15.97987
4.0000	21.063	.00132	.05692	-.04949	.00292	14.07802
4.0000	26.384	.00173	.89959	-.06331	-.00099	11.22324
4.0000	31.713	.00124	.90217	.06318	.00032	12.17216
4.0000	37.052	-.00034	1.12142	.03336	-.00012	11.22324
GRADIENT	.00016	.03552	-.00024	-.00002	.00009	6.48060
					-.25996	-.28691

DATE OF FEB 74

TABULATED SOURCE DATA LARC UPNT 1031

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 MA-7, UPNT 1031, ROCKWELL PRR ORB. CONF. BWTH41  
 (ARM078) (06 FEB 74)

## REFERENCE DATA

	RUN NO.	62 / 0	RNL =	1.00	GRADIENT INTERVAL =	-5.00 / 5.00	BETA	RNL	=	.010	PO-JET =	600,000
MACH	ALPHA	BETA	CN	CA	CIM	CBL	CYN	CY	PB1	PB2	PB3	PB3
4.000	12.527	.00135	.25120	.05926	-.02939	-.00431	.00938	-.01414	6.46360	7.41253	2.65269	2.65269
4.000	16.526	.00105	.36257	.05955	-.03362	-.00456	.00938	-.01368	6.46050	7.41253	2.65269	2.65269
4.000	20.581	.00115	.50215	.06072	-.04482	-.00388	.00818	-.01252	5.50867	6.45060	2.65269	2.65269
4.000	25.674	.00037	.68814	.05955	-.05907	-.00324	.00707	-.01095	4.55675	6.45360	2.55289	2.55289
4.000	30.876	.00051	.89236	.05723	-.07924	-.00143	.00596	-.00710	5.50867	5.50867	2.65289	2.65289
4.000	35.922	-.00022	1.09693	.05297	-.10314	-.00013	.00313	-.00284	4.55675	5.50867	2.65289	2.65289
4.000	GRADIENT	-.00026	.03647	-.00025	-.00034	-.00019	-.00028	-.00194	-.07926	-.09194	-.09194	-.09194

